MI-CLARITY3D SA

Digital 3D Cinema System

Installation & Operation Manual

Revision No. 3.0

masterImage
ABSOLUTELY 3D

Revision History

Revision	Date	Release Status	Author	Remarks
PD 1.2	June 8, 2012	Preliminary Document	RJG	Photo replacement required
PD 1.3	July 19,2012	Preliminary Document	RJG	Clarity photos added, warnings updated, troubleshooting improved
V 2.0	Sept. 15, 2012	Updated Draft	RJG	System firmware updates
V 3.0	Sept. 18, 2012	Initial Release	RJG	Production Release

Copyright © 2005-2012 MASTERIMAGE 3D, INC
All Rights Reserved

MASTERIMAGE 3D, INC. Proprietary
All other trademarks and copyrights are the property of their respective owners.

Locations

MASTERIMAGE 3D, INC
5358 Melrose Ave., 4th Floor
Hollywood CA 90038
TEL: (323) 606-7800
FAX: (323) 960-8008

MASTERIMAGE 3D ASIA, LLC.
22F, BYC HIGHCITY B/D A,
371-17, Gasan-dong, Geumcheon-gu,
Seoul 153-803, South Korea
TEL.: +82-2-3438-1600
FAX: +82-2-3438-1698

MASTERIMAGE 3D EUROPE, PLC
Pinewood Studios
Pinewood Rd., Iver Heath
Buckinghamshire
England
SL0 0NH
TEL: +44 1753 785131
Fax: +44 1753 656050

URL: *http://www.MASTERIMAGE3d.com*

Email Contact: *support@MASTERIMAGE3d.com*

© *MASTERIMAGE 3D, Inc.*

Table of Contents

1. Introduction 7
   1.1. Welcome 7
   1.2. Contacting Technical Support 7
2. Warnings and Cautions 8
   2.1. Spinning Filter Safety 8
   2.2. Burning Polarization Filter Warning 8
   2.3. New PFD Installation Caution 8
   2.4. General Electrical Safety 8
   2.5. Anti-Collision Caution 8
3. Quick Installation Guide 9
4. System Overview 10
   4.1. Key Product Components 10
   4.2. Control Panel 11
   4.3. I/O Ports 11
5. Installation and Configuration 12
   5.1. Unpacking the MI-CLARITY3D 12
      5.1.1. Unpacking and preparing the MI-CLARITY3D rolling wheels 13
   5.2. Orienting the MI-CLARITY3D in front of the Digital Projector 13
      5.2.1. Orientation 1 - Standard Right 13
      5.2.2. Orientation 2 - Standard Left 14
      5.2.3. Orientations 3 & 4 – Reversed Filter Head Right and Left 15
   5.3. Positioning the MI-CLARITY3D 16
      5.3.2. Locking the MI-CLARITY3Ds wheels in place 18
      5.3.3. Releasing the footpads to move the MI-CLARITY3D 19
   5.4. Projector File Setup 19
      5.4.1. Series II Projectors 19
      5.4.2. IMB Configuration Settings 22
6. Basic Operation of the MI-CLARITY3D 23
   6.1. System Ready (Standby Condition) 23
   6.2. Move Up and Down the PFD 24

© MASTERIMAGE 3D, Inc.

6.3. Start the System Running 24
7. Menu Structure with Default Conditions 25
8. Detailed Setup and Configuration of the MI-CLARITY3D 29
8.1. Setting the Clock 29
8.2. Setting the Lifting Column Zero Position 29
8.3. Setting a 3D Position 30
8.3.1. Moving FHA to a Predetermined 3D Position 31
8.4. Setting a 2D Position 31
8.4.1. Moving FHA to a Predetermined 2D Position 32
8.5. Selecting a Sync Source 32
8.5.1. Setting Internal Sync Source Frequency 33
8.6. Selecting an Automation Source 34
8.7. Setting PFD Home Position 35
8.8. Adjusting 3D Phase 36
8.9. System Diagnostics 36
8.10. Setting the Menu Password 37
8.11. Ethernet Configuration 40
8.12. Performing a Factory Reset 42
8.13. Servo Pack Parameter Information 43
8.14. System Log Information 43
8.15. System Information 44
9. Installation Checklist 45
10. Maintenance 46
10.1. Changing the Polarizing Filter Disk (PFD) 46
10.2. Cleaning the PFD 52
10.2.1. Materials Required 52
10.2.2. Cleaning the PFD 52
11. Simple Troubleshooting 55
11.1. Button LED Notification 55
11.2. Fuses 56
11.3. Servopak Correct Status Indication 57
11.4. Servopak Error Status Indication 58
11.4.1. E Stop Button Pressed 58

© MASTERIMAGE 3D, Inc.

11.4.2. CN1 Not Connected 59
11.4.3. CN2 Not Connected 60
12. Firmware Upgrading Process for MI-CLARITY3D Series 61
12.1. Download and Install the Upgrading Utility Tools 61
12.2. Upgrade Firmware of MI-CLARITY3D 61
12.3. Upgrade FPGA Binary 64
13. Product Specifications 68
14. Appendix A – Turning the Filter Head Assembly (FHA) 70
15. Appendix B – MI-CLARITY3D Automation 72
15.1. Ethernet Automation 75
15.1.1. Doremi Server 76
15.1.2. Qube Server 81
15.1.3. GDC Server 84
16. Appendix C – Installation Record 91
17. Appendix D – Periodic Maintenance 92
18. Appendix E – Check the STM Virtual COM Port Number 93

© MASTERIMAGE 3D, Inc.

1. Introduction

1.1. Welcome

Congratulations on choosing the finest digital projection 3D system available.

The MASTERIMAGE MI-CLARITY3D delivers the clearest full color images in a cost-effective and studio-approved single projection digital 3D system.

Paired with MASTERIMAGE high quality 3D eyewear, the MI-CLARITY3D provides the clearest and truest color 3D picture of any single filter 3D system.

This user manual provides all the information required for simple installations and the operation of the MI-CLARITY3D, with any DLP cinema projector and digital cinema server.

1.2. Contacting Technical Support

If you require technical support, our contact information is listed below:

	MASTERIMAGE 3D, INC
Email:	support@masterimage3d.com
Web Site:	**www.MasterImage3d.com**
USA Tel:	**+1-323-606-7800**
UK Tel:	**+44 1753 785131**
Asia Tel:	**+82-2-3438-1600**

© MASTERIMAGE 3D, Inc.

2. Warnings and Cautions

2.1. Spinning Filter Safety

The MI-CLARITY3D operates a high speed rotating PFD (Polarizing Filter Disk). Keep all hands and objects away from the system when starting up and operating.

2.2. Burning Polarization Filter Warning

In order to avoid burning the polarization filter material, the MI-CLARITY3D PFD must be lowered or moved out of the light path during lamp adjustments. In general the PFD should always be turning when it is in the light path of the projector.

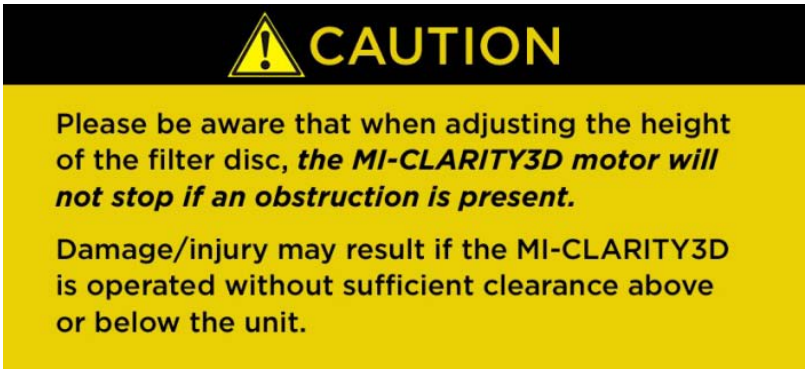
2.3. New PFD Installation Caution

If installing or replacing a new PFD, ensure that the protective film pieces have been removed from each of the polarizing filter segments. PFD Home Position adjustment MUST be performed after PFD replacement. Refer to section 8.7, Setting the PFD Home Position, on page 35.

2.4. General Electrical Safety

Disconnect the power cord before doing service work or opening the base compartment.

2.5. Anti-Collision Caution


CAUTION
Please be aware that when adjusting the height of the filter disc, the MI-CLARITY3D motor will not stop if an obstruction is present.
Damage/injury may result if the MI-CLARITY3D is operated without sufficient clearance above or below the unit.

© MASTERIMAGE 3D, Inc.

3. Quick Installation Guide

If you are already experienced in the unpacking, installation and configuration of pervious 3D Cinema Systems from MasterImage 3D Inc. please refer directly to Section 8 of this manual.

Follow steps 8.1 to 8.7 for the minimum requirements for the setup of the MI-CLARITY3D to ensure safe installation and optimum performance from this model.

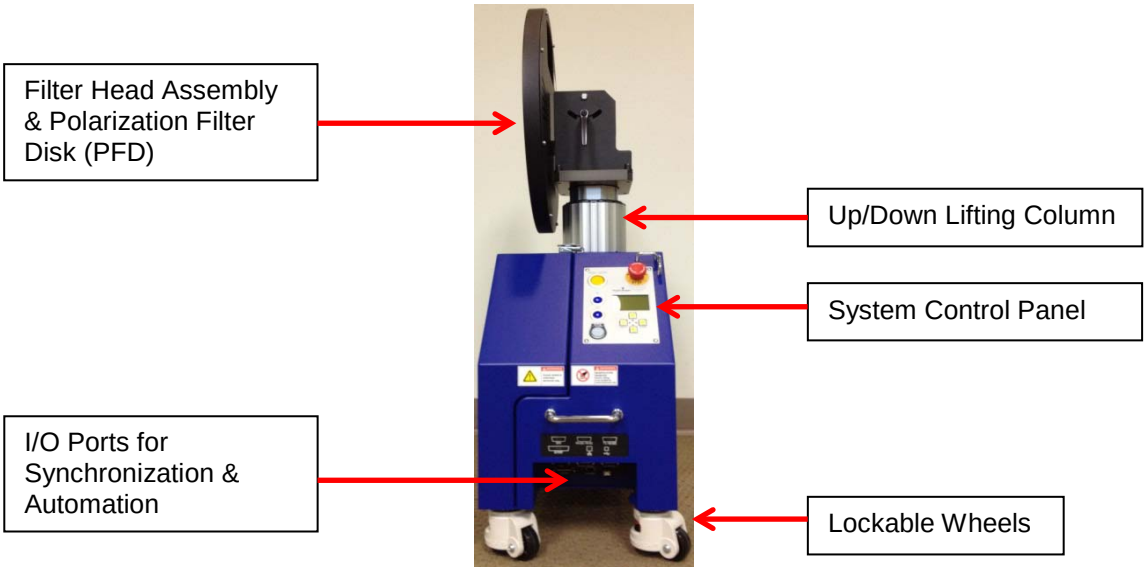
IMPORTANT: **PFD Home Position** adjustment is required at installation.
Refer to section 8.7 Setting the PFD Home Position on page 35.

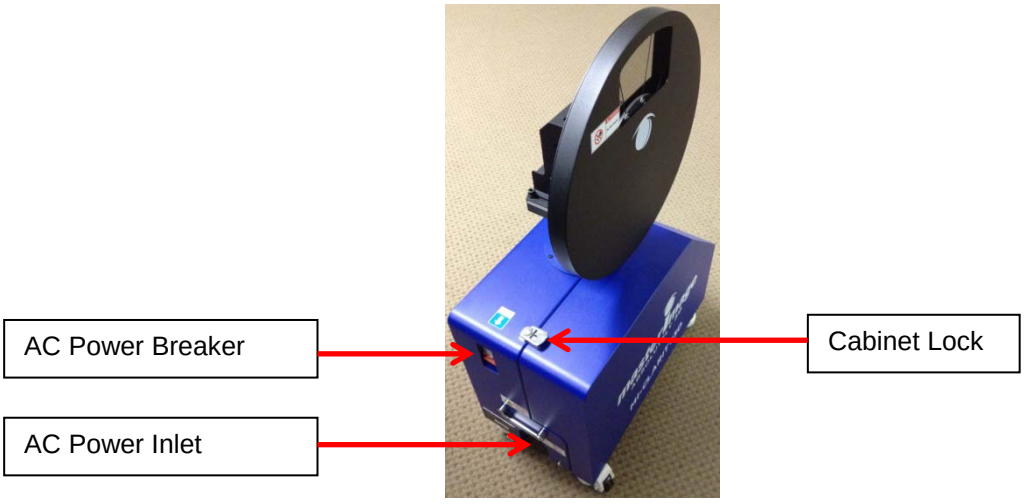
Should you be unsure about any particular step, please read this manual in its entirety before contacting Technical Support for assistance.

© MASTERIMAGE 3D, Inc.

4. System Overview

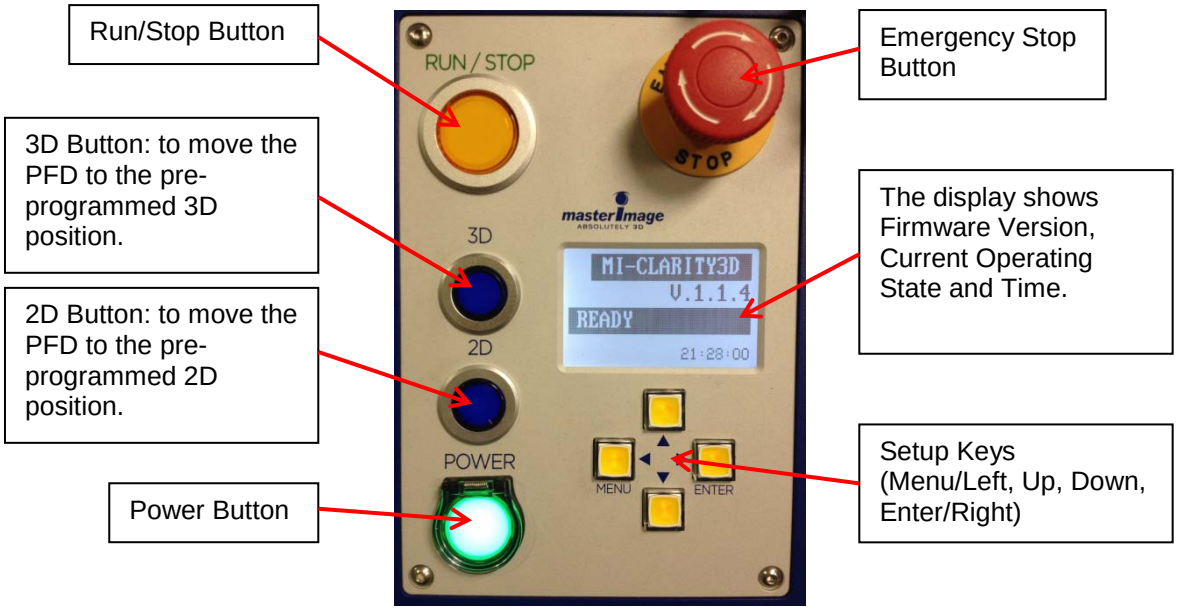
4.1. Key Product Components


Filter Head Assembly & Polarization Filter Disk (PFD)
Up/Down Lifting Column
System Control Panel
I/O Ports for Synchronization & Automation
Lockable Wheels

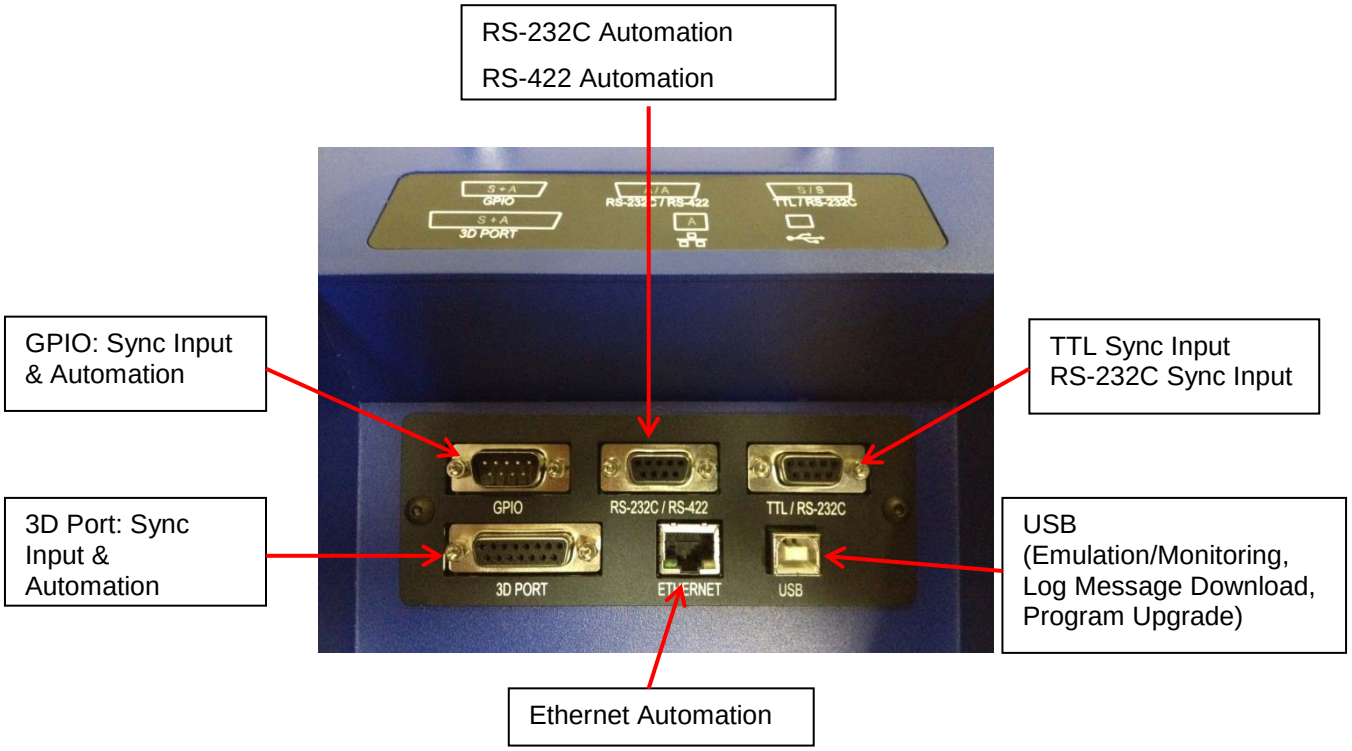


© *MASTERIMAGE 3D, Inc.*

4.2. Control Panel



4.3. I/O Ports



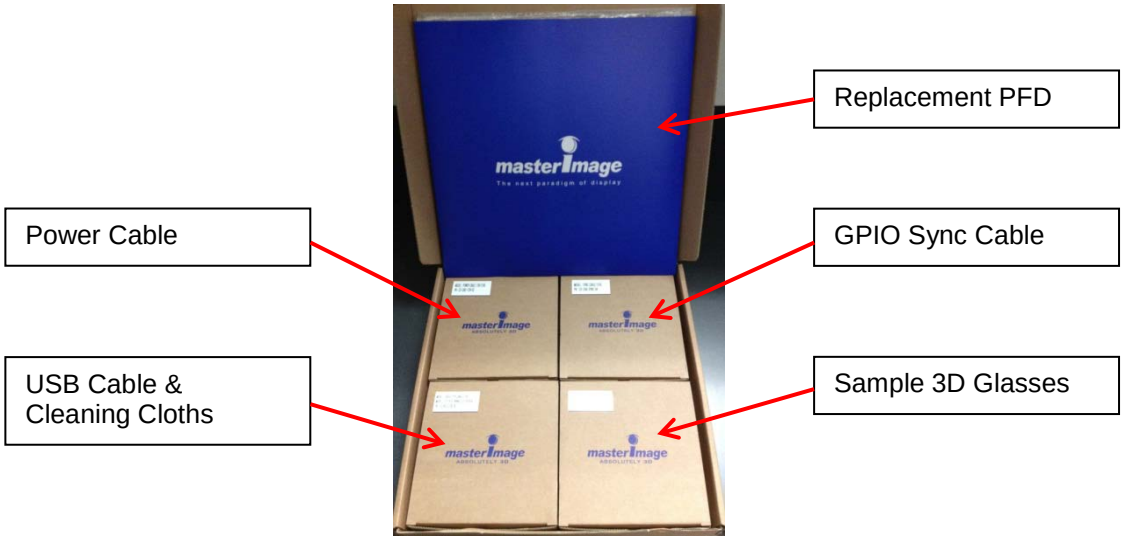
© *MASTERIMAGE 3D, Inc.*

5. Installation and Configuration

5.1. Unpacking the MI-CLARITY3D

1. Inspect the MI-CLARITY3D crate for any external damage.

2. Carefully remove the crate fasteners, and top and sides of crate using an 8mm socket and power tools.
3. Loosen the shipping straps and remove the protective wrap.
4. Ensure all items are included: MI-CLARITY3D, cover, installation kit box, and spare polarizing filter disk.



MI-CLARITY3D Installation Kit Box

© MASTERIMAGE 3D, Inc.

5.1.1. Unpacking and preparing the MI-CLARITY3D rolling wheels

The unit is shipped with the rolling wheels locked. After unpacking, turn the orange rings in the wheel assembly to the left (clockwise) in order to raise the locking pads and allow the unit to be rolled easily.

MI-CLARITY3D Rolling Wheel

5.2. Orienting the MI-CLARITY3D in front of the Digital Projector

There are four ways the filter head and main base can be oriented in order to best fit the space of the projection booth and projector.

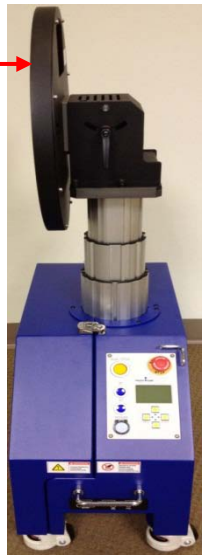
Note: For all orientations described below, the Polarizing Filter Disk (PFD) filter surface **must face the screen**. Some setups may require that the PFD be removed and turned around in order for the material surface to face the screen.

5.2.1. Orientation 1 – Standard Right

The system is shipped ready to be used in “Standard Right” orientation with the control panel facing the right side of the projector.

By using the adjustment slots in the filter motor mount plate, the PDF can be moved laterally by up to 2 inches, for fine adjustment of position relative to the projector lens. This configuration is the most commonly used setup for all projector types. The images below illustrate the standard right orientation, as well as a standard right orientation that has been adjusted/extended toward the projector.

© *MASTERIMAGE 3D, Inc.*



Standard Right Orientation

Standard Right Orientation -- Extended

5.2.2. Orientation 2 – Standard Left

With overhanging lenses, as commonly found in Christie projectors, the system may be set with the control panel facing the left side of the projector in order to be more convenient to the operator or to deal with floor space issues.

See Appendix A – Turning the Filter Head, page 70, for complete instructions on removing and turning the filter disk.

CAUTION

Please be aware that when adjusting the height of the filter disc, ***the MI-CLARITY3D motor will not stop if an obstruction is present.***

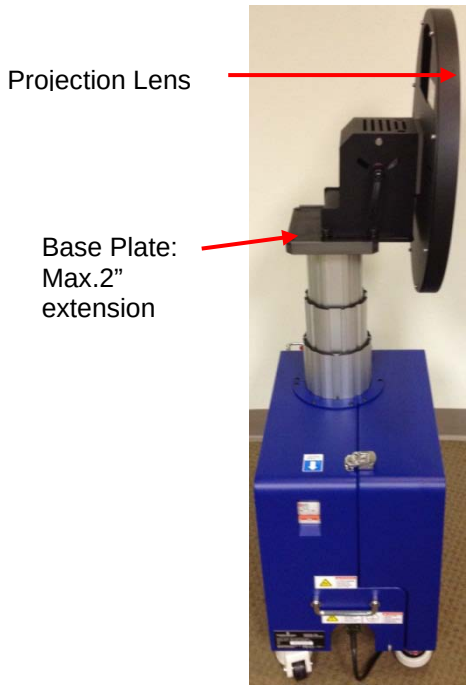
Damage/injury may result if the MI-CLARITY3D is operated without sufficient clearance above or below the unit.

See the image below for an illustration of this orientation.

Note: For this setup, the Polarizing Filter Disk (PFD) must be removed and turned in order for the filter surface to face the screen.

IMPORTANT: **PFD Home Position adjustment is required at installation**.
Refer to section 8.7, Setting the PFD Home Position, on page 35.

© MASTERIMAGE 3D, Inc.



Standard Left Orientation

5.2.3. Orientations 3 & 4 – Reversed Filter Head Right and Left

In rare cases where the lens, projector, floor space or port window do not allow for standard positioning of the filter head, the filter head can be removed and reversed in order to work in the unique spacing requirements and to get the filter disk as close to the lens as required (1/4 to 1/2 inch).

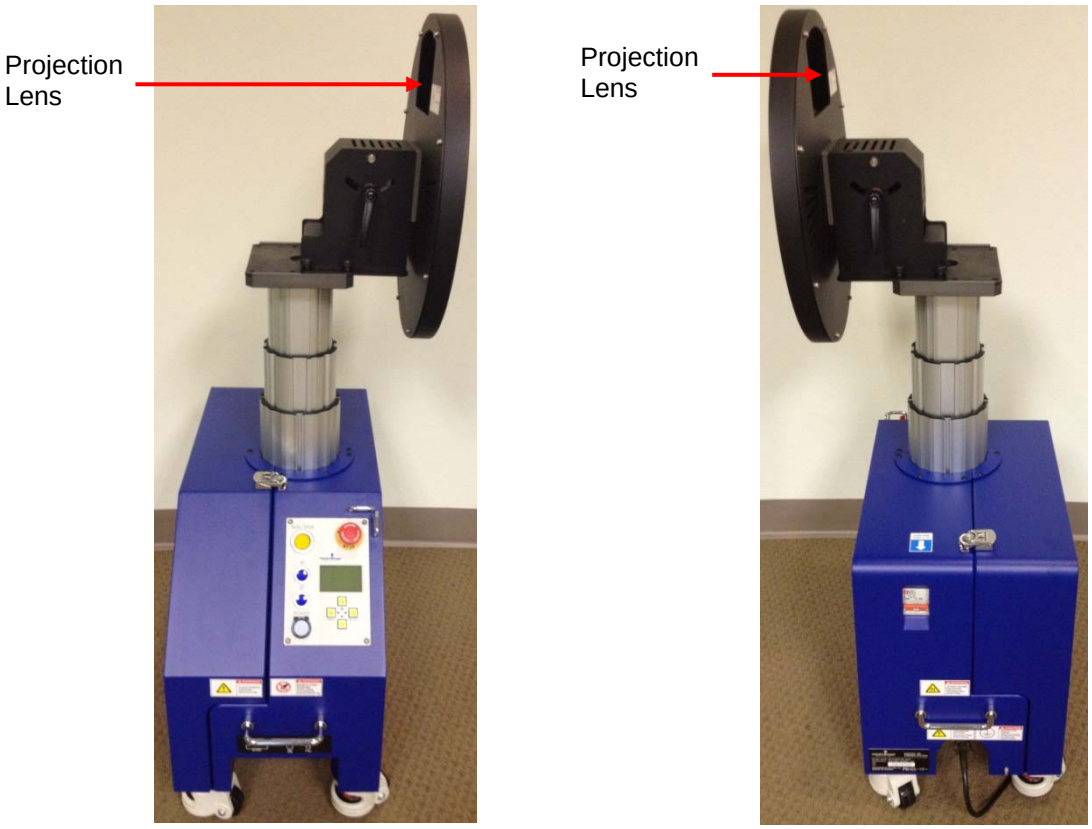
CAUTION
Please be aware that when adjusting the height of the filter disc, *the MI-CLARITY3D motor will not stop if an obstruction is present.*
Damage/injury may result if the MI-CLARITY3D is operated without sufficient clearance above or below the unit.

See images below for examples of this orientation.

If it is necessary to reverse the filter head assembly, see Appendix A – Turning the Filter Head, page 70, for specific instructions.

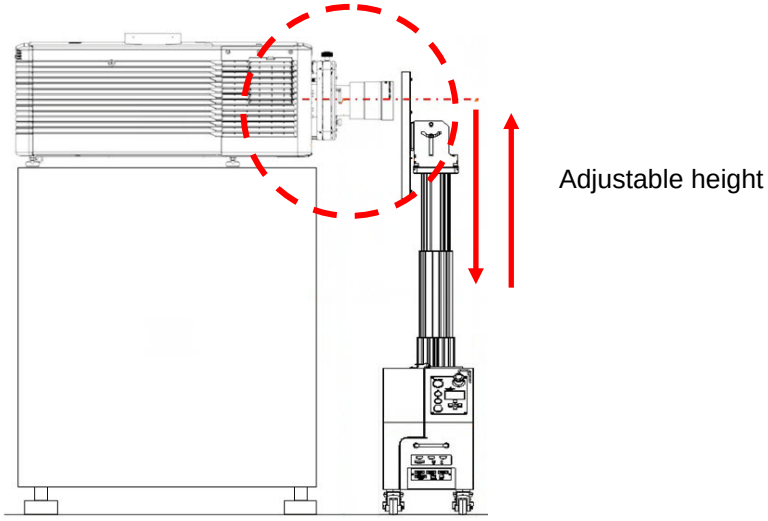
Note: As in the standard setups, the PFD filter surface MUST face the screen.

© MASTERIMAGE 3D, Inc.



5.3. Positioning the MI-CLARITY3D

1. Position the MI-CLARITY3D centered with the projector lens and adjust the PFD height using **Up** arrow switch on the control panel.



© *MASTERIMAGE 3D, Inc.*

Note: This switch can only be used when the system is in READY status.

When the Up arrow switch is pressed and held, the up motion of the filter head assembly continues to move until the switch is released.

CAUTION
Please be aware that when adjusting the height of the filter disc, *the MI-CLARITY3D motor will not stop if an obstruction is present.*
Damage/injury may result if the MI-CLARITY3D is operated without sufficient clearance above or below the unit.

Use extreme caution in adjusting the filter head height for the first time.

The control panel may be on either side of the projector, based on user access and closest positioning of the filter to the lens.

Result: When in position, the MI-CLARITY3D Filter Head Assembly (FHA) should be parallel to the projector lens from both the top and side views. Make sure all motor mount screws and nuts are tight.

5.3.1. Fine-adjusting the Image Position on the MI-CLARITY3D PFD

CAUTION: Do not make position adjustments while the PFD is turning.

Note: To prevent burning the filter, use a darker image for this setup and do not expose the stationary PFD to the image for more than 30 seconds at a time.

The PFD cover should be approximately ¼ to ½ inch away from the projector lens when viewed from the side.

1. Project an image onto the screen (see Note above).
2. Pushing the Up or Down arrow button briefly, fine-adjust the position of the image on the MI-CLARITY3D PFD so that it is centered just below the top edge of the PFD area and equally spaced on the left and right sides.

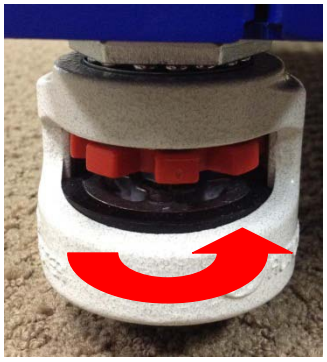
The image below illustrates how the projected image should be positioned on the MI-CLARITY3D PFD.

© MASTERIMAGE 3D, Inc.

3. Once the position has been adjusted, store this as the 3D Position (as described in Setting a 3D Position, page 30).

5.3.2. Locking the MI-CLARITY3Ds wheels in place

Lock down all four of the base wheels by lowering the foot pads. To do this, turn the orange ring to the right (counter-clockwise). This will stabilize the unit.



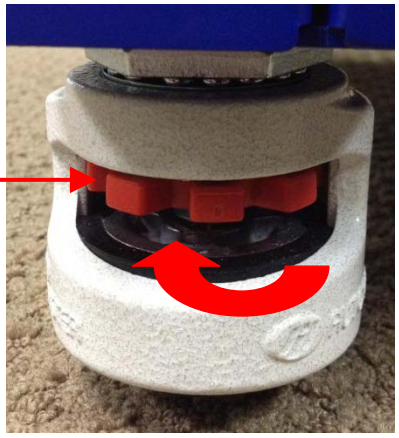
Turn the orange ring to the right to bring each footpad down and secure the MI-CLARITY3D.

© MASTERIMAGE 3D, Inc.

5.3.3. Releasing the footpads to move the MI-CLARITY3D

Turn the orange ring to the left (clockwise) to raise each footpad to release it and move the MI-CLARITY3D.

Turn the orange ring to the left to raise each footpad to release it and move the MI-CLARITY3D.



5.4. Projector File Setup

It is necessary to configure the projectors 3D control file to work with the MI-CLARITY3D. The procedures below describe configuring the control files for Series I and Series II projectors. Follow the instructions for the appropriate projector.

Recommended Dark Time Reference Settings:

Frame Rate	2:2	4:2	6:2	Remark
24fps	N/A	1740	1160	D-Cinema
25fps	N/A	1670	1110	3D Live Broadcast
30fps	N/A	1390	N/A	3D Live Broadcast
48fps	1740	TBA	N/A	High Frame Rate
60fps	1390	N/A	N/A	High Frame Rate

5.4.1. Series II Projectors

Configure the projector settings as shown in the illustrations below for NEC, Christie and Barco projectors. Please also note the following:

Note: In certain installations, where space is restricted in front of the projector or where the lens protrudes a long way, it may be necessary to install the MI-CLARITY3D the opposite way around, that is, with the PFD motor under the lens.

© MASTERIMAGE 3D, Inc.

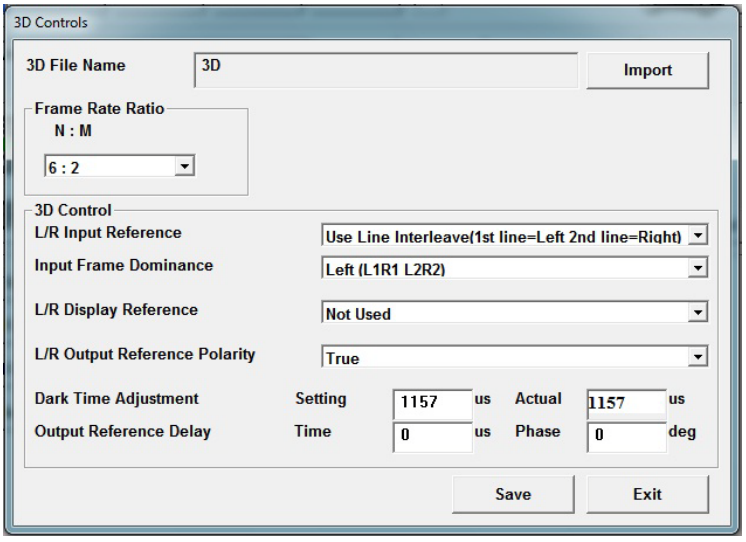
In this condition it is important that the PFD itself is refitted the opposite way maintaining the polarizing material facing the screen. (See Orienting the MI-CLARITY3D in front of the Digital Projector, page 13).

Should the above installation condition be necessary, then the 3D setting for L/R Output Reference Polarity or 3D Sync Polarity should be changed to **Inverted**.

Always make sure that 3D material is viewed on screen to ensure no artifacts are present.

Note: If you plan to change any of the settings shown below, first contact MASTERIMAGE technical support for details see Section 1.2. (Contacting Technical Support).

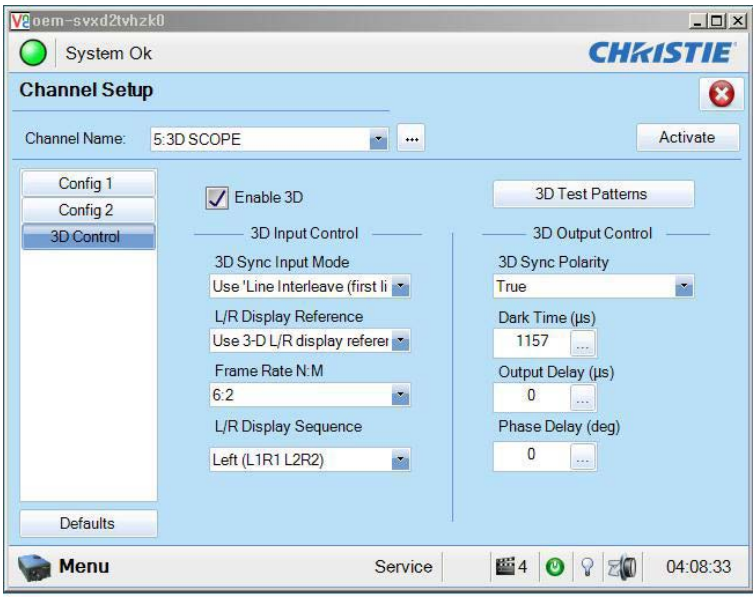
NEC Series II file settings for external server playback



Note: Settings for NEC where the projector Firmware Release Pack is lower than v2.33 are different from both Christie and Barco file configurations. This projector should have the L/R Input Reference field set to Use selected Input port (polarity=true). It may also be necessary to switch the Input Frame Dominance when viewing the on screen image.

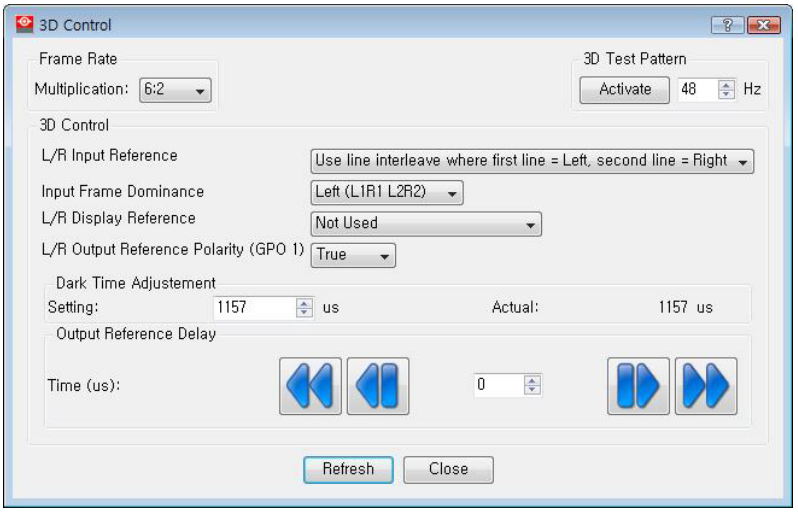
© MASTERIMAGE 3D, Inc.

Christie Series II file settings for external server playback



Note: The Christie projectors should have the field 3D Sync Input Mode set to Use line interleave (First line = Left, second line = right).

Barco Series II file settings for external server playback



Note: The Barco projectors should have the field L/R Input Reference set to Use line interleave (First line = Left, second line = right).

Barco Series II projectors have a pre-installed 3D configuration file for the settings required by the MasterImage 3D system; it is possible to select this file rather than making manual entries.

© MASTERIMAGE 3D, Inc.

5.4.2. IMB Configuration Settings

Projector configuration settings when using an IMB (Integrated Media Block) are slightly different; an example of this is given below for a Christie projector and a Doremi IMB. The changes are highlighted in bold. Other projector/IMB manufacturers configurations may vary slightly; please contact the respective manufacturers for specific information.

Config. 1

- **Input = IMB-Internal**
- **Data Format = 4:4:4 (RGB)**
- Source File = Based on content resolution + aspect ratio (1998x1080 Flat, 2048x858 Scope, etc.)
- Screen File = Site Specific (typically Flat or Scope based on content)
- Use PCF = not selected (unchecked)
- Lamp File = Site Specific
- ILS File = Site Specific
- Auxiliary Lens = Site Specific – Selected if Anamorphic Lens or WCL needed, otherwise unselected

Config. 2

- Measured Color = Site Specific (Create on site)
- Target Color = DC28_DCI_XYZE_314_351
- **Colour Space = Unity RGB**
- Gamma = Gamma 2.6
- LUT-CLUT = Linear_9x9x9
- Scan Type = Progressive
- LD Bypass = Selected (this sends IMB output directly to ICP. This is required if no LD is installed)

3D Control

- Enable 3D = Selected
- **3D Sync Input Mode = Use Selected Input Port (polarity = true)**
- Frame Rate N:M = 6:2
- L/R Display Sequence = Left (L1R1 L2R2)
- 3D Sync Polarity = True (If left/right eye images swapped set to Inverted)
- Dark Time = 1157
- Output Delay = 0
- Phase Delay = 0

© MASTERIMAGE 3D, Inc.

6. Basic Operation of the MI-CLARITY3D

Note: In order to prevent accidental operation, press and hold all function buttons for more than 2 seconds for the system to respond.

6.1. System Ready (Standby Condition)

With the projector in 3D mode/channel,

1. Ensure that the AC Power Breaker switch is ON.
2. Push the **POWER** button on the Control Panel to start the system.

Readiness is indicated by:

- **POWER** button LED is illuminated.
- The display shows its name and firmware version.
- The display shows its status as READY when it is ready to run.
- The display shows the current set time.

© MASTERIMAGE 3D, Inc.

6.2. Move Up and Down the PFD

1. In order to position the PFD in front of the projector lens, push the **UP** arrow button to move the FHA in an upwards direction or the **DOWN** arrow button for downwards until the PFD is aligned with the projector lens.
   - The display shows its status as UP MOVING while pressing the **UP** button.
   - The display shows its status as DOWN MOVING while pressing the **DOWN** button.

CAUTION

Please be aware that when adjusting the height of the filter disc, ***the MI-CLARITY3D motor will not stop if an obstruction is present.***

Damage/injury may result if the MI-CLARITY3D is operated without sufficient clearance above or below the unit.

6.3. Start the System Running

1. Press and hold the **RUN/STOP** button for more than 3 seconds. The 3D system will start immediately.

- The display shows the sync frequency as received from the projector, or the predefined internal frequency.
- After the PFD rotation has become synchronized with the input signal from the projector, the display shows its status as RUNNING (LOCK) along with the input frequency.
- This indicates that the system is in sync with the projected 3D images.

© MASTERIMAGE 3D, Inc.

7. Menu Structure with Default Conditions

No.	1st Level	2nd Level	3rd Level	4th Level
1	CLOCK	[MMM] [DD] [YYYY] [HH] : [DD] : [SS] [CANCEL] [SAVE]		
		Set the local date and time. Date: JAN 01 2011 ~ DEC 31 2050 | Default: JAN 01 2011 00:00:00		
2	LIFT ZERO	Adjust Lifting Column Position? [CANCEL] [OK]	Adjusting Lifting Column! Wait a second…	
		Adjust the zero position of lifting column for eliminating accumulated position error of lifting column.		
3	3D POSITION	OLD: mmmm NEW: [MMMM] [CANCEL] [SAVE]		
		Set a 3D position of PFD Value: 0000 ~ < 1800 | Default: N/A (0xFFFF)		
4	2D POSITION	OLD: mmmm NEW: [MMMM] [CANCEL] [SAVE]		
		Set a 2D position of PFD Value: 0000 ~ < 1800 | Default: N/A (0xFFFF)		
5	SYNC SOURCE	1.GPIO 2.3D PORT 3.RS-232C 4.TTL 5.INTERNAL [>1] 6.EXIT	[>1] INTERNAL Hz OLD: mmm NEW: [MMM] [CANCEL] [SAVE]	
		Select a 3D synchronization input port Value: GPIO, 3D PORT, RS-232C, TTL, INTERNAL, EXIT | Default: GPIO INTERNAL Sync Value: 48 ~ 75Hz | Default: 48Hz		

© MASTERIMAGE 3D, Inc.

No.	1st Level	2nd Level	3rd Level	4th Level
6	AUTOMATION	1. MANUAL 2. GPIO 3. RS-232C 4. RS-422 5. 3D PORT 6. ETHERNET 7. SYNC PULSE >1 8. EXIT	>1 REFERENCE Hz OLD: mmm NEW: [MMM] [CANCEL] [SAVE]	
		Select a 3D automation I/O port Value: MANUAL, GPIO, RS-232C, RS-422, 3D PORT, ETHERNET, SYNC PULSE | Default: MANUAL REFERENCE Hz Value: 48 ~ 75Hz | Default: 72Hz		
7	PFD HOME	Set MARK Top, and Push [RUN] [CANCEL]	Setting PFD Home Position! Wait a second…	PFD Home Setting Completed! [EXIT]
		Set the PFD Home position to teach the system the 3D synchronization position for the PFD during the initial installation, after PFD replacement or Factory Default reset		
8	3D PHASE	1. SYNcPOLARITY >1 2.OFFSET >2 3. EXIT	>1 SYNC POLARITY OLD: TRUE NEW: [INVERT] [CANCEL] [SAVE] >2 OFFSET OLD: mmm NEW: [MMM] [CANCEL] [SAVE]	
		Adjust sync polarity and the offset of 3D phase if any 3D artifacts are seen on screen SYNC POLARITY Value: TRUE, INVERT, Default: TRUE OFFSET Value: -180 ~ +180 | Default: +000		
9	DIAGNOSTICS	Diagnose System Status? [CANCEL] [OK]	FSMC TEST: mm* EPP TEST: mm SVO TEST: mm [EXIT]	

© *MASTERIMAGE 3D, Inc.*

<table>
<tr><th>No.</th><th>1st Level</th><th>2nd Level</th><th>3rd Level</th><th>4th Level</th></tr>
<tr><td></td><td></td><td colspan="3">Diagnose the system status including communication to FPGA, EEPROM, and communication to Servo pack.
*mm: Ok or NG</td></tr>
<tr><td>10</td><td>SET PASSWORD</td><td>1.PASSWORD [OFF]* >1
2.NEW PASSWORD >2
3.EXIT</td><td>>1 SET PASSWORD
OLD: mmm*
NEW: [MMM]*
[CANCEL] [SAVE]
>2 NEW PASSWORD
KEY: [o]
* * * *
[CANCEL] [OK] >3</td><td>>3 CONFIRM PWD
KEY: [o]
* * * *
[CANCEL] [OK]</td></tr>
<tr><td></td><td></td><td colspan="3">Turn on or off system password, set new 4-digit password
KEY Value: 0 ~ 9 | Default: 0
Password Value: 0000 ~ 9999 | Default: 0000
* Current Status: OFF or ON</td></tr>
<tr><td>11</td><td>SET ETHERNET</td><td>1.IP >1
2.SUBNET MASK >2
3.GATEWAY >3
4.PORT NUMBER >4
5.EXIT</td><td>>1 IP
[MMM].[NNN].[NNN].[OOO]
[CANCEL] [SAVE]
>2 SUBNET MASK
[NNN].[NNN].[NNN].[NNN]
[CANCEL] [SAVE]</td><td></td></tr>
<tr><td></td><td></td><td></td><td>>3 GATEWAY
[MMM].[NNN].[NNN].[OOO]
[CANCEL] [SAVE]
>4 PORT NUMBER
[n][m][m][m][m]
[CANCEL] [SAVE]</td><td></td></tr>
<tr><td></td><td></td><td colspan="3">Configure Ethernet parameters for automation
Value: [MMM] 0 ~ 233, [NNN] 0 ~ 255, [OOO] 0 ~ 254 |
IP Default: 192.168.000.101, SUBNET MASK Default: 255.255.255.000,
GATEWAY Default: 192.168.000.001
PORT NUMBER: 00001 ~ 49999 | Default: 5000</td></tr>
</table>

© MASTERIMAGE 3D, Inc.

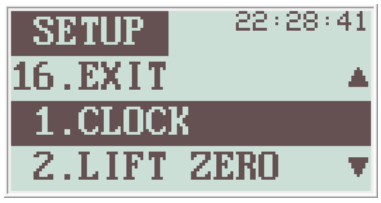
No.	1st Level	2nd Level	3rd Level	4th Level
12	SET FACTORY	Perform a Factory Reset? [CANCEL] [OK]	Performing a Factory Reset! Wait a second…	
		Reset all user entered information to the factory condition.		
13	SET SERVO	ADDRESS:[0xMMM] DATA: [NNNNNNNN] [EXIT] [RD] [WR]		
		Get or set parameters of Servo pack		
14	LOG INFO	INDEX: [NNNN] YYYY-MM-DD>hh:mm:ss [log_msg][param1][param2] [EXIT]		
		Get log data Value: [NNNN] 0000~2048		
15	INFORMATION	MASETERIMAGE 3D, INC. DIGITAL 3D CINEMA SYSTEM> MI-CLARITY3D *F/W VER: 000-004-002 +1 *FPGA VER:00c +2 *Sep 1 2011, 05:26:31 +3		
		Show system information +1 F/W Version, +2 FPGA Version, +3 Date and time of building F/W		

© MASTERIMAGE 3D, Inc.

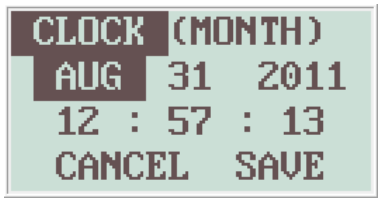
8. Detailed Setup and Configuration of the MI-CLARITY3D

8.1. Setting the Clock

Note: The Factory Default setting is JAN 01 2011 00:00:00.



1. To set the local time and date on the system from the standby condition, press and hold the **MENU** key.
2. Press **UP** or **DOWN** key to select **CLOCK** menu in the **SETUP** screen.
3. Press **ENTER** key to set clock.



4. Press **UP** or **DOWN** key to increase or decrease the value of selected field.
   - Press **LEFT** or **RIGHT** key to select a field for changing its value.
   - Press and hold the **ENTER** key on selecting CANCEL to return to the SETUP screen without saving the current value.
   - Press and hold the **ENTER** key on selecting SAVE to return to the SETUP screen after saving the current value.

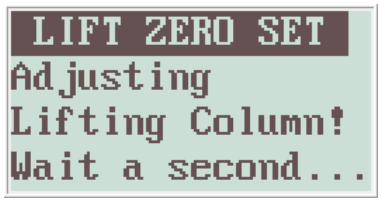
Note: To rapidly increase or decrease a value of selected field, press and hold **UP** or **DOWN** key.

8.2. Setting the Lifting Column Zero Position

1. To adjust the zero position of the lifting column from the standby condition, press and hold the **MENU** key.
2. Press **UP** or **DOWN** key to select **LIFT ZERO** menu in the SETUP screen.
3. Press **ENTER** key to adjust the lifting column zero position.

4. Press **LEFT** or **RIGHT** key to select CANCEL or OK.
5. Press and hold the **ENTER** key on selecting **CANCEL** to return to the SETUP screen without adjusting the lifting column zero position.
6. Press and hold the **ENTER** key on selecting **OK** to adjust the lifting column zero position.
   - While adjusting the lifting column zero position, the lifting

© MASTERIMAGE 3D, Inc.



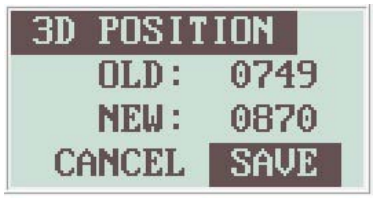
column goes down to bottom position, then goes up some distance, and then goes down to bottom position.

- After finishing adjustment of the lifting column zero position, SETUP screen automatically displays.

8.3. Setting a 3D Position

Note: The Factory Default setting is N/A.

1. To set a 3D position of Filter Head Assembly (FHA) from the standby condition, press and hold the **MENU** key.
2. Press **UP** or **DOWN** key to select **3D POSITION** menu in the SETUP screen.
3. Press **ENTER** key to set a 3D position of FHA



4. Press **UP** or **DOWN** key to move the FHA position up or down.

   The FHA goes up or down quickly while pressing **UP** or **DOWN** key.

   The NEW value shows current position of the FHA.
5. Press **LEFT** or **RIGHT** key to select CANCEL, SAVE or NEW value.
6. Pres sand hold the **ENTER** key on selecting **CANCEL** to return to the SETUP screen without saving new 3D position value.
7. Press and hold the **ENTER** key on selecting **SAVE** to return to the SETUP screen after saving new 3D position value.

© *MASTERIMAGE 3D, Inc.*

8.3.1. Moving FHA to a Predetermined 3D Position

1. To move the FHA to a predetermined 3D position from the standby condition, press and hold the **3D** button.

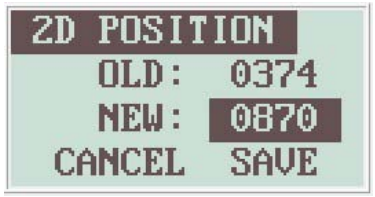
   The display shows its status as **3D POSITION** while moving the FHA to a predetermined 3D position.

2. Press **2D** or **RUN/STOP** button to immediately stop the motion of the PFD.

8.4. Setting a 2D Position

Note: The Factory Default setting is N/A.

1. To set a 2D position for the FHA from the standby condition, press and hold the **MENU** key.
2. Press **UP** or **DOWN** key to select **2D POSITION** menu in the SETUP screen.
3. Press **ENTER** key to set a 2D position of FHA.

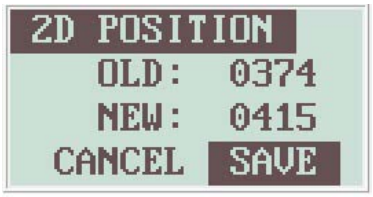


4. Press the **UP** or **DOWN** key to move the FHA position up or down.

   The FHA goes up or down quickly while pressing the **UP** or **DOWN** key.

   The NEW value shows current position of the FHA.
5. Press **LEFT** or **RIGHT** key to select CANCEL, OK or NEW value.
6. Press and hold the **ENTER** key on selecting **CANCEL** to return to the SETUP screen without saving new 2D position

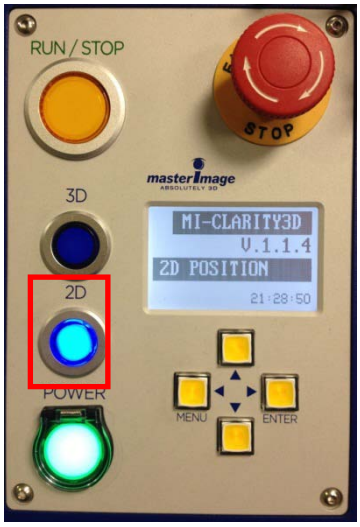
© *MASTERIMAGE 3D, Inc.*



value.

7. Press and hold the **ENTER** key on selecting **OK** to return to the SETUP screen after saving new 2D position value.

8.4.1. Moving FHA to a Predetermined 2D Position



1. To move the FHA to a predetermined 2D position from the standby condition, press and hold the **2D** button.

The display shows its status as **2D POSITION** while moving the FHA to a predetermined 2D position.

2. Press **3D** or **RUN/STOP** button to immediately stop the FHA motion.

8.5. Selecting a Sync Source

Note: The Factory Default setting is GPIO.

1. To select a 3D synchronization input port that is to be used from the standby condition, press and hold the **MENU** key.
2. Press **UP** or **DOWN** key to select **SYNC SOURCE** menu in the SETUP screen.
3. Press **ENTER** key to select a sync source.

© MASTERIMAGE 3D, Inc.

SYNC SOURCE shows the current synchronization input port in the list. The selected option is indicated by the asterisk ***.**

4. Press the **UP** or **DOWN** key to select previous or next sync source in the list.

   The options for sync source include GPIO, 3D PORT, RS-232C, TTL, and INTERNAL.

5. Press **ENTER** key to return to the SETUP screen after saving the current selected item as new sync source.
6. Press **ENTER** key on selecting **EXIT** to return to the SETUP screen without changing the current sync source.

8.5.1. Setting Internal Sync Source Frequency

Note: The Factory Default setting is 48Hz.

If the INTERNAL sync source is selected, the default frequency of the internal sync generator can be adjusted as required from 48 to 75Hz.

1. Press the **ENTER** key on selecting INTERNAL to set the default frequency of the internal sync generator.

The display shows the default frequency of the internal sync generator.

2. Press **UP** or **DOWN** key to increment or decrement the default frequency of **NEW** value.
3. Press **LEFT** or **RIGHT** key to select CANCEL, OK or NEW value.

4. Press and hold the **ENTER** key on selecting **CANCEL** to return to the SETUP screen without saving new default frequency value.
5. Press and hold the **ENTER** key on selecting **OK** to return to the SETUP screen after saving new default frequency value.

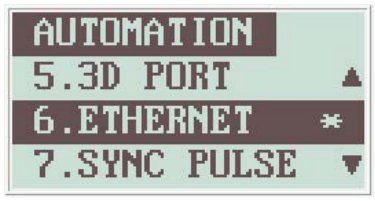
© MASTERIMAGE 3D, Inc.

8.6. Selecting an Automation Source

Note: The Factory Default setting is Manual.

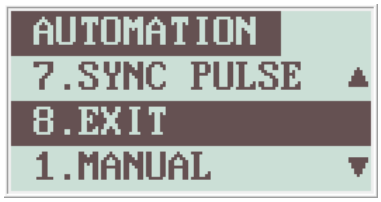
Options are available to automate the control of the MI-CLARITY3D for both 2D and 3D movie presentation. As a default, all controls are set to be operated from the Control Panel on the system as shown below.

1. To select an automation source from the standby condition, press and hold the **MENU** key.
2. Press **UP** or **DOWN** key to select **AUTOMATION** menu in the SETUP screen.
3. Press **ENTER** key to select an automation source.



AUTOMATION shows the current automation source in the list. The selected option is indicated by the asterisk *.

4. Press the **UP** or **DOWN** key to select previous or next automation source in the list.



The options for automation source include MANUAL, GPIO, RS-232C or RS-422, 3D PORT, ETHERNET, and SYNC PULSE.

5. Press the **ENTER** key to return to the SETUP screen after saving the current selected item as new automation source.
6. Press the **ENTER** key on selecting **EXIT** to return to the SETUP screen without changing the current automation source.

Note: SYNC PULSE automation: When this option is selected the system will prompt for an entry to be made for the frequency that is to be detected. This input range is from 48 to 75Hz. If, for example, this was set to 72Hz for 6:2 presentation then when the system receives a synchronization signal above 71Hz, the system automatically begins to rotate the PFD and moves the FHA to the 3D position. Equally, when the synchronization signal drops below 71Hz, the system automatically stops PFD rotation and moves the FHA to the 2D position..

© MASTERIMAGE 3D, Inc.

8.7. Setting PFD Home Position

IMPORTANT: **PFD Home Position adjustment is required at installation**, after PFD replacement or Factory Default reset. It is necessary to teach the system the 3D synchronization position for the PFD

1. To set PFD home position from the standby condition, press and hold the **MENU** key.
2. Press the **UP** or **DOWN** key to select **PFD HOME** menu in the SETUP screen.
3. Press the **ENTER** key to set PFD home position.

4. As instructed, rotate the PFD manually so that the black sensor mark on the outer edge can be seen at the top position of the PFD window in the PFD cover as shown in this illustration.

5. Press the **ENTER** key on selecting **CANCEL** to return to the SETUP screen without setting PFD home position.
6. Press the **RUN/STOP** button to set PFD home position.

7. Press the **ENTER** key on selecting **EXIT** to return to the SETUP screen after setting PFD home position.

© MASTERIMAGE 3D, Inc.

8.8. Adjusting 3D Phase

CAUTION: While it is possible to make adjustments to the 3D PHASE angle within the MI-CLARITY3D, this is not usually required or recommended.

Note: The Factory Default setting is SYNC POLARITY = TRUE
3D PHASE = +000.

If any 3D artifacts are seen on screen, it is possible to manually adjust the 3D phase of the MI-CLARITY3D.

1. To adjust 3D phase from the standby condition, press and hold the **MENU** key.
2. Press the **UP** or **DOWN** key to select **3D PHASE** menu in the SETUP screen.
3. Press the **ENTER** key to adjust 3D phase.

4. The default setting for this item is 0^{o} and can be adjusted both to the positive and negative in 1^{o} steps using the **UP** or **DOWN** key.

   It is necessary to view the image on screen after each adjustment to ensure any artifacts have been eliminated.
5. Press **LEFT** or **RIGHT** key to select CANCEL, SAVE or NEW value.
6. Press and hold **ENTER** key on selecting **CANCEL** to return to the SETUP screen without saving new 3D phase value.
7. Press and hold **ENTER** key on selecting **SAVE** to return to the SETUP screen after saving new 3D phase value.

8.9. System Diagnostics

1. To diagnose the system from the standby condition, press and hold the **MENU** key.
2. Press **UP** or **DOWN** key to select DIAGNOSTICS menu in the SETUP screen.
3. Press **ENTER** key to diagnose the system.

© *MASTERIMAGE 3D, Inc.*

4. Press **LEFT** or **RIGHT** key to select CANCEL or OK.
5. Press and hold the **ENTER** key on selecting **CANCEL** to return to the SETUP screen without diagnosing the system.
6. Press and hold the **ENTER** key on selecting **OK** to start diagnostics.

After diagnosing the system, the display shows the system status, as shown at left.

- FSMC TEST shows the test result of communication to FPGA.
- EEP TEST shows the test result of EEPROM.
- SVO TEST shows the test result of communication to Servo Pack.

If a test has failed, the display shows its status as NG (Not Good).

7. Press **ENTER** key to return to the SETUP screen.

8.10. Setting the Menu Password

Note: The default password is 0000.

1. To set password from the standby condition, press and hold the **MENU** key.
2. Press **UP** or **DOWN** key to select SET PASSWORD menu in the SETUP screen.
3. Press the **ENTER** key to set password.

To Set Password On/Off

The current selected condition is indicated inside the [ ] brackets

1. Press **ENTER** key on selecting 1.PASSWORD [OFF] to turn on password for protecting the system.

© MASTERIMAGE 3D, Inc.

The display shows the current status of Password on/off.

2. Press **UP** or **DOWN** key to turn on or off password protection.
3. Press **LEFT** or **RIGHT** key to select CANCEL, SAVE or NEW value.
4. Press and hold the **ENTER** key on selecting **CANCEL** to return to the SET PASSWORD screen without saving the new on/off state.
5. Press and hold the **ENTER** on selecting **SAVE** to return to the SET PASSWORD screen after saving new on/off state.

To Change Password

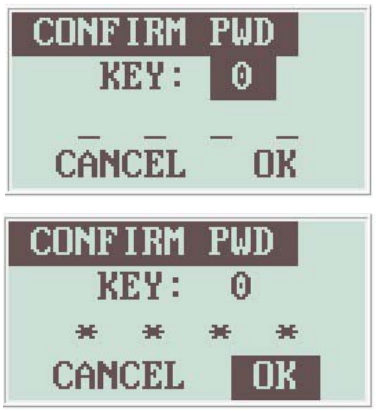
1. Press the **ENTER** key on selecting NEW PASSWORD to change password.

Note: A password must consist of 4 digits, like “1234”.

2. Press **UP** or **DOWN** key to select a digit, CANCEL, or OK value.
3. Press and hold the **ENTER** key on selecting any digit, to select 4-digit password.
4. Press and hold the **ENTER** key on selecting **CANCEL** to return to the SET PASSWORD screen without saving new password.
5. Press and hold the **ENTER** key on selecting **OK** to confirm new 4-digit password.

Note: A password must consist of 4 digits. There will be no action when pressing **ENTER** key on selecting OK if new password has been entered with fewer than 4 digits.

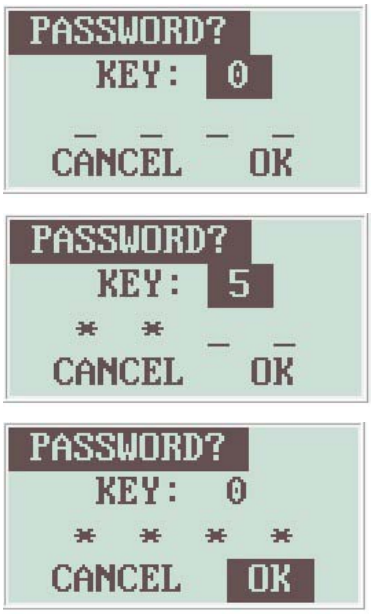
© MASTERIMAGE 3D, Inc.



6. Press **UP** or **DOWN** key to select a digit, CANCEL, or OK value.
7. Press and hold the **ENTER** key on selecting any digit, to select 4-digit password.
8. Press and hold the **ENTER** key on selecting **CANCEL** to return to the SET PASSWORD screen without saving new password.
9. Press and hold the **ENTER** key on selecting **OK** to return to the SET PASSWORD screen after saving new 4-digit password.

To Protect the System with a Password

If the password is turned ON, you must enter the correct 4-digit password to access the SETUP screen.



1. Press **UP** or **DOWN** key to select a digit, CANCEL, or OK value.
2. Press and hold the **ENTER** key on selecting any digit.
3. Press and hold the **ENTER** key on selecting **CANCEL** to return to the standby condition.
4. Press and hold the **ENTER** key on selecting **OK** to enter to the SETUP screen if the password is correct.

© *MASTERIMAGE 3D, Inc.*

8.11. Ethernet Configuration

Note: Factory Default settings are:
IP= 192.168.000.101
SUBNET MASK= 255.255.255.000
GATEWAY= 192.168.000.001
PORT NUMBER= 5000

The items that require configuration are IP, SUBNET MASK, GATEWAY and PORT.

1. To configure Ethernet from the standby condition, press and hold the **MENU** key.
2. Press **UP** or **DOWN** key to select 11.SET ETHERNET menu in the SETUP screen.
3. Press **ENTER** key to configure Ethernet.

4. Press **UP** or **DOWN** key to select previous or next configuration item in the list.

   The options for Ethernet configuration include IP, SUBNET MASK, GATEWAY and PORT.
5. Press the **ENTER** key on selecting **EXIT** to return to the SETUP screen.

To Set the IP Address

1. Press **ENTER** key on selecting 1.IP to change IP address.

The display shows the current IP address.

2. Press **UP** or **DOWN** key to increment or decrement the selected value.
3. Press **LEFT** or **RIGHT** key to select any IP address, CANCEL, or SAVE.
4. Press and hold the **ENTER** key on selecting **CANCEL** to return to the SET ETHERNET screen without saving new IP address.
5. Press and hold the **ENTER** key on selecting **SAVE** to return to the SET ETHERNET screen after saving new IP address.

© MASTERIMAGE 3D, Inc.

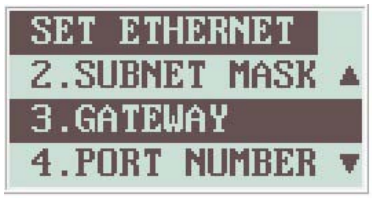
To Set the Subnet Mask

1. Press **ENTER** key on selecting SUBNET MASK to change Subnet Mask address.

The display shows the current Subnet Mask address.

2. Press **UP** or **DOWN** key to increment or decrement the selected value.
3. Press **LEFT** or **RIGHT** key to select any Subnet Mask address, CANCEL, or SAVE.
4. Press and hold the **ENTER** key on selecting **CANCEL** to return to the SET ETHERNET screen without saving new Subnet Mask address.
5. Press and hold the **ENTER** key on selecting **SAVE** to return to the SET ETHERNET screen after saving new Subnet Mask address.

To Set the Gateway



1. Press **ENTER** key on selecting 3.GATEWAY to change Gateway address.

The display shows the current Gateway address.

2. Press **UP** or **DOWN** key to increment or decrement the selected value.
3. Press **LEFT** or **RIGHT** key to select any Gateway address, CANCEL, or SAVE.
4. Press **ENTER** key more than 1 second on selecting CANCEL to return to the SET ETHERNET screen without saving new Gateway address.
5. Press **ENTER** key more than 1 second on selecting SAVE to return to the SET ETHERNET screen after saving new Gateway address.

© MASTERIMAGE 3D, Inc.

To Set the Port Number

1. Press **ENTER** key on selecting PORT NUMBER to change the Port Number.

   The display shows the current Port Number.

2. Press **UP** or **DOWN** key to increment or decrement each digit individually to set the desired value.
3. Press **LEFT** or **RIGHT** key to select each digit, CANCEL, or SAVE.

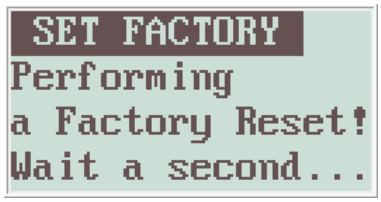
4. Press and hold the **ENTER** key on selecting **CANCEL** to return to the SET ETHERNET screen without saving new Port Number.
5. Press and hold the **ENTER** key on selecting **SAVE** to return to the SET ETHERNET screen after saving new Port Number.

8.12. Performing a Factory Reset

This option will reset all user entered information (Date/Time, Ethernet Configuration, 2D and 3D Position, 3D Phase, Password, etc.) to the factory condition.

1. To perform a factory reset from the standby condition, press and hold the **MENU** key.
2. Press **UP** or **DOWN** key to select SET FACTORY menu in the SETUP screen.
3. Press **ENTER** key to perform a factory reset.

4. Press **LEFT** or **RIGHT** key to select CANCEL, or OK.
5. Press and hold the **ENTER** key on selecting **CANCEL** to return to the SETUP screen without performing a factory rest.
6. Press and hold the **ENTER** key on selecting **OK** to start to perform a factory reset.



Wait a short time.

© MASTERIMAGE 3D, Inc.

7. After completing a factory reset, LIFT ZERO SET screen shows automatically. Press **OK** to accept this automatic setting.

Note: For eliminating accumulated position error of lifting column, adjust lifting column zero position after performing a factory reset.
Then the PFD Home Position adjustment MUST be performed again. Refer to section 8.7, Setting the PFD Home Position, on page 35.

8.13. Servo Pack Parameter Information

1. To get or set parameters of Servo Pack from the standby condition, press and hold the **MENU** key.
2. Press **UP** or **DOWN** key to select SET SERVO menu in the SETUP screen.
3. Press **ENTER** key to set parameters of Servo Pack.
4. Press **UP** or **DOWN** key to change values of ADDRESS or DATA
5. Press **LEFT** or **RIGHT** key to select ADDRESS, DATA, EXIT, RD, or WR.
6. Press and hold the **ENTER** key on selecting **EXIT** to return to the SETUP screen.
7. Press and hold the **ENTER** key on selecting **RD** to read data of the defined address from Servo Pack.
8. Press and hold the **ENTER** key on selecting **WR** to write data of the defined address into Servo Pack.

8.14. System Log Information

Note: The system can store up to 2048 unique operation logs referenced by date and time. These can assist with system troubleshooting should a problem occur.

1. To get system information from the standby condition, press the **MENU** key more than 1 second.
2. Press **UP** or **DOWN** key to select LOG INFO menu in the SETUP screen.
3. Press **ENTER** key to get and see log data.

© MASTERIMAGE 3D, Inc.

The display shows the index of recent log, time stamp, log name, parameter 1, and parameter 2.

4. Press **UP** or **DOWN** key to change the log INDEX.

   The Index is simply the sequential number of each log data entry. Log Data entries are date/time stamped (the second line in the display). The message is displayed on the third line. The maximum number of stored log messages is 9999.

5. Press **LEFT** or **RIGHT** key to select INDEX or EXIT.
6. Press and hold the **ENTER** key on selecting **EXIT** to return to the SETUP screen.

Current Log Messages

Log name	Description	1st Parameter	2nd Parameter	Remarks
SSYC	Rotating PFD after receivig sync signal	Sync signal (Hz)	Servo speed (Hz)	This log is recorded when locking sync signal.
CYNC	Changing sync signal	Sync signal (Hz)	Servo speed (Hz)	Stop running PFD or change sync signal more than 3Hz
SPER	Servo pack Error	N/A	N/A	
DC3D	PFD moved to 3D position	Preset 3D position counter of lifting column	Position counter of current lifting column	
DC2D	PFD moved to 2D position	Preset 2D position counter of lifting column	Position counter of current lifting column	

8.15. System Information

1. To get system information from the standby condition, press and hold the **MENU** key.
2. Press **UP** or **DOWN** key to select INFORMATION menu in the SETUP screen.
3. Press **ENTER** key to get system information.

   The display shows the Copyright, Product Name, Brand Name, F/W (firmware) version, FPGA version, and date and time of building F/W.

4. Press **ENTER** key to return to the SETUP screen.

© MASTERIMAGE 3D, Inc.

9. Installation Checklist

No.	Item	Check	Remarks
1	Determine spacing and position of the MI-CLARITY3D in front of the Projector		
2	Check that the polarizing filter is on the screen side of the disk, and silver screen and non-depolarizing port glass are installed.		
3	Check SYNC Cable connection between MI-CLARITY3D and Projector		
4	Check the Projector lens and MI-CLARITY3D filter are parallel and that the base wheels are locked.		
5	Check location of the projected image on the top center of MI-CLARITY3D filter.		
6	Store the position settings for both 2D and 3D.		
7	Confirm that PFD Home Position adjustment has been performed.		
8	Check the Projector 3D Control file settings		
9	Check that the LCD display is showing the sync frequency and “LOCK” when filter is running		
10	Check the 3D picture for proper 3D effects, proper framing and no ghosting.		
11	Complete the Installation Record Form, and send it to *support@MASTERIMAGE3d.com* or fax a copy to 323-960-8008.		

© *MASTERIMAGE 3D, Inc.*

10. Maintenance

WARNING: To avoid electric shock, ensure the power switch is off and unplug the power cord prior to cleaning the PFD
Injury may result while working near moving parts. Do not power up the system to spin the PFD while cleaning the PFD.

CAUTION: Avoid scratching and damaging the PFD by performing the cleaning procedure and use cleaning solutions only as outlined in this document.

CAUTION: Use great care not to touch the image area on either side of the PFD. Only handle the PFD by the outer edge.

10.1. Changing the Polarizing Filter Disk (PFD)

Polarizing Filter Disks (PFD) **should be replaced annually** to ensure proper optical performance. A spare PFD should be kept on hand at all times. Contact your local equipment provider or MASTERIMAGE office for the supply of new PFDs.

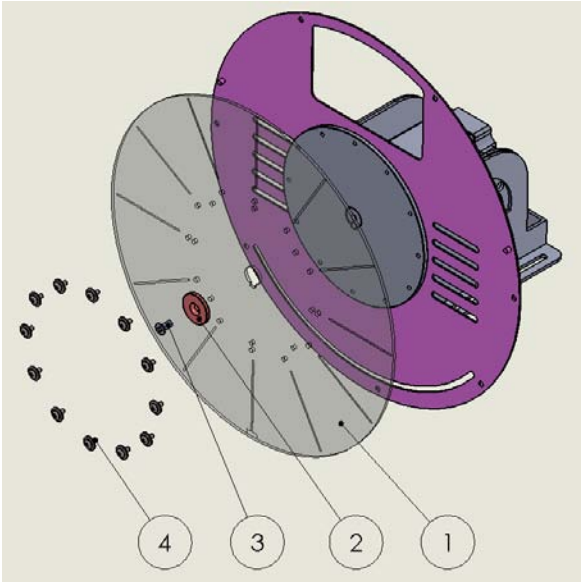
CAUTION: Use only Polarizing Filter Disks (PFD) with a colored label including the initials “PC”. These will include “PC-OK” and “AR-PC”. Any PFDs without a “PC” label must be changed immediately due to risk of possible material failure.

Note: If turning the PFD to suit the system installation conditions please follow steps 1~4 and 8~14 of this section.

1. Disconnect the MI-CLARITY3D power cord and sync cable, and move them out from in front of the projector in order to have good access and lighting to work on the filter head assembly.
2. Carefully remove the PFD cover by removing the eight screws. Remove the screws in a sequence starting with bottom screws and moving on to top screws.

© MASTERIMAGE 3D, Inc.

3. Unfasten the PFD by removing the twelve outer screws holding it in place followed by the center PFD position guide and screw.



1. PFD
2. PFD Position Guide
3. PFD Position Guide Screw
4. PFD Outer Screws and Washers

CAUTION: Use ONLY a hand screwdriver to loosen and tighten the PFD screws. DO NOT use any powered screwdriver or drill motor that could over-tighten the screws and damage the PFD.

© MASTERIMAGE 3D, Inc.

4. Carefully remove the PFD from the drive hub.

5. Set the old PFD aside and immediately mark it with a permanent marker as follows: "**Used, removed on [today's date]**".

6. Wipe any dust off of the PFD cover back with a suitable cleaning cloth (but not the PFD cleaning cloth).

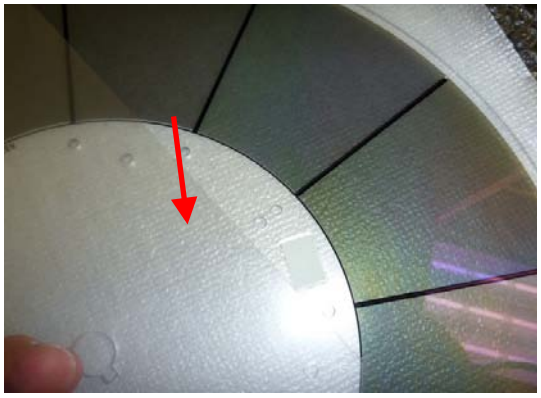
7. Unwrap the new PFD as follows:
   - First remove the circular protective film from the polarization filter side of the PFD.
   - Then remove the individual pieces of cling film from each of the 12 filter segments, if applicable.

Note: PFDs labeled with the "**AR PC**" code, as shown at right, do <u>not</u> have the small segment cling film pieces, so simply remove the circle of protective film.

The protective film appears dull and is easily removed – if the filter is shiny, these pieces have already been removed.

© MASTERIMAGE 3D, Inc.

- Last, peel off the sticky film from the clear side of the filter.



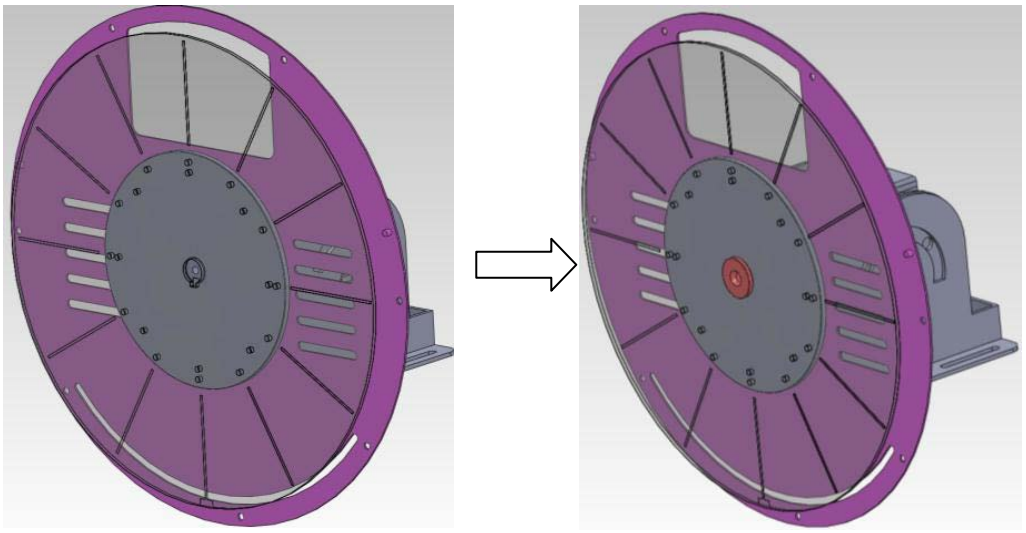
8. Orient the disk with the filter material facing the correct side for your theatre. The PFD is labeled to show "**This side is towards screen**" and "**This side is towards projector**".

CAUTION: The Projectionist or Operator should inspect the surface of the PFD to check for damage using a bright light such as flash light. If there is any damage on polarizing filter disk, please replace it with spare PFD.

The polarizing filter material side of the PFD must always face the screen.

9. Carefully place the PFD on the hub and assemble the PFD Position Guide.

© *MASTERIMAGE 3D, Inc.*



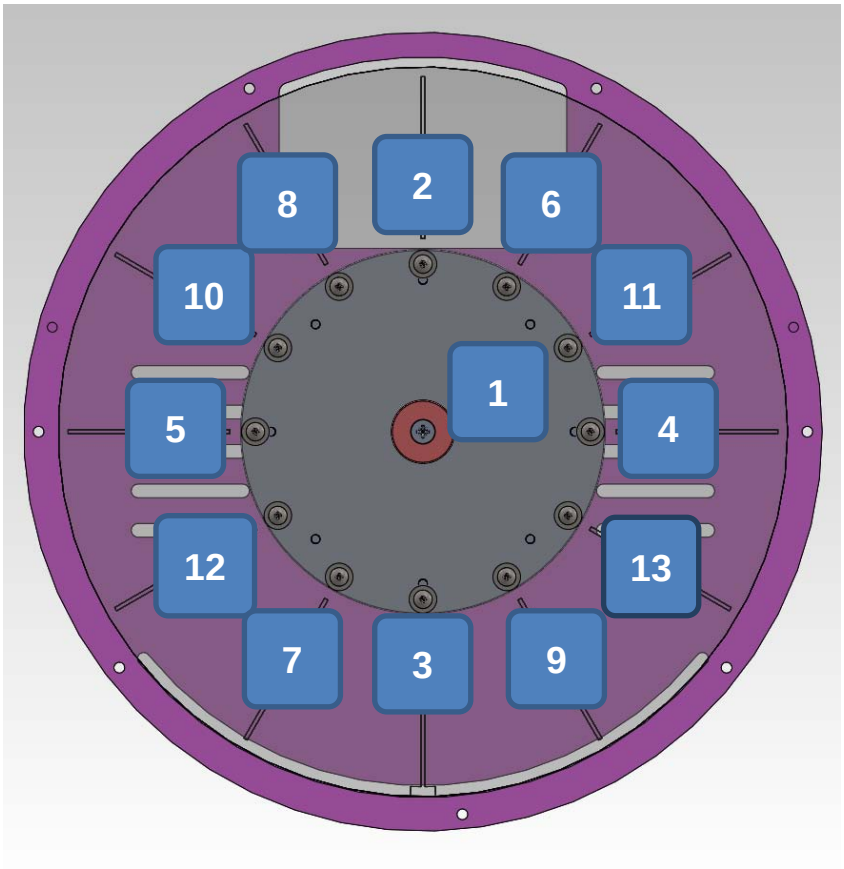
10. To secure the PFD, do the following:

- Insert the countersunk PFD Position Guide Screw. Do not tighten at this time.
- Insert each of the 12 PFD Outer Screws but do not tighten. Ensure flat and spring washers are fitted to each screw.

CAUTION: Whenever fitting the PFD on the 3D system, a flat washer and a spring lock washer must be used on the 12 outer screws to fix it securely and safely.

- After all the screws are in place, begin tightening each screw one at a time following the pattern indicated below.
- **Tighten only hand-tight. Do not use a powered screwdriver – DO NOT force,** to avoid damage to the PFD**.** Work once around the PDF to check that all screws have been tightened.
- If a suitable torque measuring tool is available, apply a maximum torque to the PFD Position Guide Screw of 13 kgf cm. or 11.3 lbf in. (0.94 lbf ft.) and 12 kgf cm. or 10.4 lbf in. (0.868 lbf ft.) to the 12 PFD Outer Screws.

© MASTERIMAGE 3D, Inc.



11. Replace the PFD cover by carefully placing it over the PFD. Replace all eight screws loosely. Hand-tighten the screws firmly from the top to the bottom.
12. Plug in the power cable, turn on the system power, and push the **Run/Stop** switch to check the filter turning balance. After a successful check, stop the filter, power off the system, and unplug the power cable.
13. Move the MI-CLARITY3D back into proper position in front of the projector lens, and check that the polarization filter side of the PFD is facing the screen.
14. Plug in the power cable, reconnect the sync cable, and check that the system is functioning properly with 3D content on the screen.

CAUTION: **PFD Home Position adjustment MUST be performed** after PFD replacement. Refer to section 8.7, Setting the PFD Home Position, on page 35.

15. Record the date of the filter change and any comments in the Service Data Records.

© *MASTERIMAGE 3D, Inc.*

10.2. Cleaning the PFD

10.2.1. Materials Required

To ensure that PFD is cleaned safely, use materials as specified.

- Use only approved micro fiber type polishing cloths. These cloths feel extra soft to the touch with absolutely no abrasive texture. Samples are shown in the image below:

- Isopropyl alcohol – minimum 70%
- Clean film handling gloves (optional)

CAUTION:. The use of unapproved chemicals can lead to PFD failure. Please contact MASTERIMAGE with any questions regarding cleaning materials.

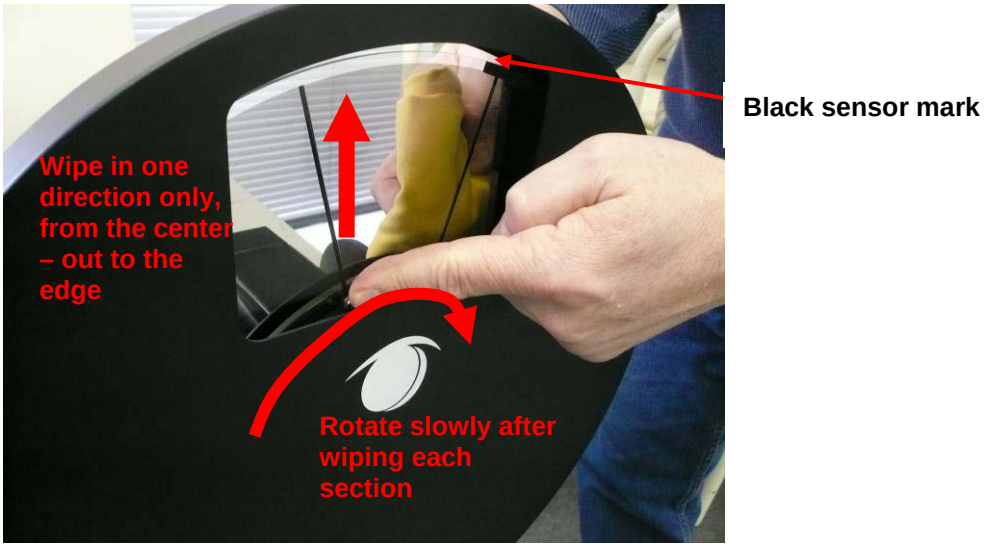
10.2.2. Cleaning the PFD

Note: The PFD cover does not have to be removed to clean the PDF.
If possible, unlock the wheels and move the MI-CLARITY3Daway from the projector lens to an area with bright lighting.
If the unit cannot be moved out to an open space, lower the FHA below the lens using the **2D** button in order to provide access to the front and back of the filter.

1. Turn off the power switch and unplug the power cord.
2. Being careful to only touch the center hub, spin the wheel slowly until the black sensor mark is at the top of the PFD opening. This is the starting reference point.

© MASTERIMAGE 3D, Inc.

3. Hold the PFD steady with one hand, and while applying gentle pressure, carefully wipe the PFD with the cleaning cloth. Wipe from the center of the PFD to the outer edge only. See the illustration below.



Cleaning the PFD surface

4. Rotate the PFD slightly with the other hand between each upward wipe of the cloth. Refold the cloth after every 2 or 3 wipes in order to maintain a clean cloth surface on the PFD.
5. Continue to rotate and wipe the PFD until one side of the filter is clean. Use the black sensor mark to indicate when the entire PFD has been wiped.
6. Switch hands or sides and repeat the process for the other side of the PFD, as shown in the illustration below:
7. Repeat the cleaning process if required in order to completely remove any dirt or residue on the PFD.

Clean the other side

© MASTERIMAGE 3D, Inc.

For areas that are difficult to clean:

Isopropyl alcohol is the recommended cleaning solution. If using any other solution for the first time on the PFD, apply a small amount of solution to the cloth. Then wipe a small area near the PFD hub (out of the picture area) and inspect the results carefully for any surface damage. This must be tested on both sides of the PFD as they are made of different materials.

- Apply a small amount of alcohol to the cleaning cloth. Never put cleaning solutions directly on the PFD.
- Gently rub the cloth over the PFD while applying a light pressure. Check the results frequently.

CAUTION: Projectionist or Operator should inspect the surface of PFD to detect any damage using bright light such as flash light. If there is any damage on polarizing filter disk, please replace it with spare PFD.

Note: If not using the MI-CLARITY3D for several days, protect the PFD with a clean cover.

For any other cleaning questions contact MASTERIMAGE 3D directly at *support@masterimage3d.com* .

© *MASTERIMAGE 3D, Inc.*

11. Simple Troubleshooting

11.1. Button LED Notification

The system buttons contain LEDs that display system status. 1) yellow LED on **RUN/STOP** button, 2) blue LED on **3D** button, blue LED on **2D** button, and green LED on **POWER** button.

No.	State	BUTTON LED				Remarks
		RUN/ STOP	3D	2D	POWER	
1	Booting					**RUN/STOP** On while booting **POWER** On while system running
2	Emergency Stop					Flashes at intervals of 0.2 seconds
3	Servopack Alarm (Servo Error)					
4	Sync Lock					**RUN/STOP** On while PFD running in sync lock condition.
5	Sync Fail / Prior to Sync Lock					Flashes at intervals of 0.8 seconds
6	PFD Moving Up					
7	PFD Moving Down					

KEY

BUTTON LED On while completing a task or an action

BUTTON LED always On

BUTTON LED blinking while completing a task or an action

© *MASTERIMAGE 3D, Inc.*

11.2. Fuses

If the system is plugged in and the MI-CLARITY3Ds LCD display on the control panel does not light up when the power breaker is switched ON and the Power button has been pressed, then it is necessary to check the main power fuses.

To check and replace fuses:

1. Turn off the main power breaker and unplug the MI-CLARITY3D.
2. To check the fuses through the base access door, remove the main base cover plate.
3. Unlock and open access door and locate the two fuse holder modules as shown in this photo:

Location of 2 fuse holder modules

4. Open each fuse holder and remove the fuses as shown in the photos below:

© MASTERIMAGE 3D, Inc.

5. Check the fuses for continuity.

   Open (burned) fuses can be replaced with time delay fuses of either FNM-10 or FNQ-R-10 type.

FNM-10 Type Fuse

6. Install the good fuses and any replacements and close the fuse holders and base door.
7. Plug in the MI-CLARITY3D and turn on the power breaker.

   If fuses blow again or if the fuses are OK and therefore not the problem, then contact your local service provider or MASTERIMAGE Technical Support (see Section 1.2. *Contacting Technical Support* for details).

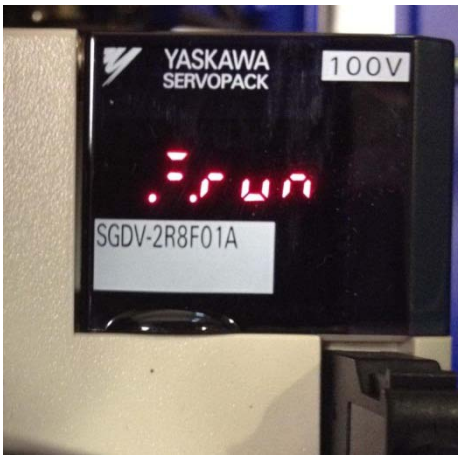
11.3. Servopak Correct Status Indication

The Servopak inside the MI-CLARITY3D has a 7 segment LED display that indicates different status conditions for the system. Both correct running conditions and error status indications are described below.

The images below indicate the correct status indication from the Servopak for both Standby and Running conditions.

© MASTERIMAGE 3D, Inc.

System Standby Indication



System Running Indication

11.4. Servopak Error Status Indication

The images below indicate particular Servopak error conditions and the respective corrective action that should be taken.

11.4.1. E Stop Button Pressed

Indication shown for 1 second as soon as E-Stop is pressed (rarely seen)

Indication after 1 second until E-Stop is released.

© MASTERIMAGE 3D, Inc.

The display will show the E-Stop indication along with the Run/Stop, 3D & 2D buttons all flashing.

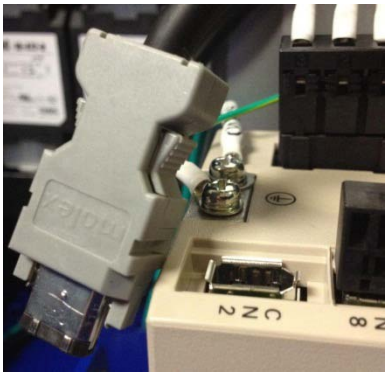
To recover from this condition check the operating situation is safe, release the E-Stop button by twisting in the direct of the arrows until the button pops out, the system can now be started.

11.4.2. CN1 Not Connected

The display will also show an error similar to that shown at left. If this situation is seen, power off the system, check the connection of the CN1 cable, reinsert if necessary and power on the system.

© MASTERIMAGE 3D, Inc.

11.4.3. CN2 Not Connected



The display will also show an error similar to that in the image above. If this situation is seen, power off the system, check the connection of the CN2 cable, reinsert as necessary and power on the system.

© MASTERIMAGE 3D, Inc.

12. Firmware Upgrading Process for MI-CLARITY3D Series

Note: The latest firmware and associated utility tools can be downloaded from the MasterImage FTP site:

ftp://masterimage3d.us

L: mi3dguest1
P: MI3DuploadASIA

The current system firmware version can be seen on the LCD display when the system is in Standby.

12.1. Download and Install the Upgrading Utility Tools

Download the firmware upgrading utility and virtual COM port driver from the following URL:

⇒ *http://www.st.com/internet/mcu/product/164495.jsp*

1. Execute the VCPDriver executable file downloaded from the ftp site to install the virtual COM port driver, following the on-screen instructions to complete the process.
2. Execute the DfuSe_Demo executable file downloaded from the ftp site to install the DfuSe Demo utility program, following the on-screen instructions to complete the process.

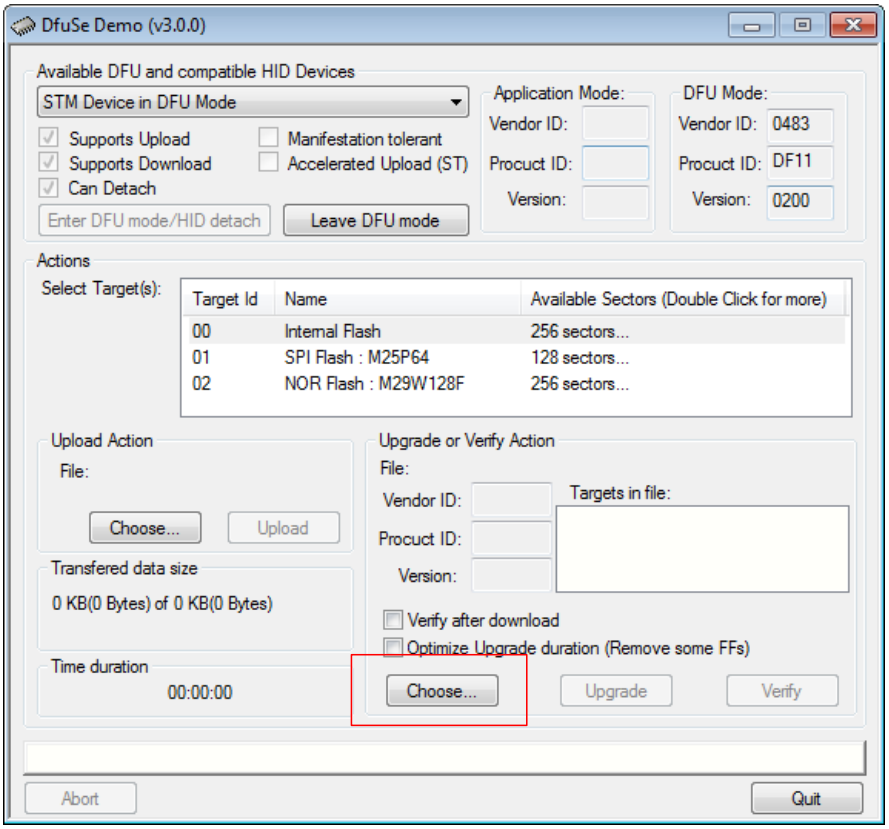
12.2. Upgrade Firmware of MI-CLARITY3D

1. Connect between the MI-CLARITY3D and your PC using a USB cable.
2. Push and hold the MI-CLARITY3D **POWER** button to turn off the system power.
3. Push and hold the **ENTER** key and push the **POWER** button to change the system to the DFU (Device Firmware Upgrade) mode. The screen shown below will display on the MI-CLARITY3D.

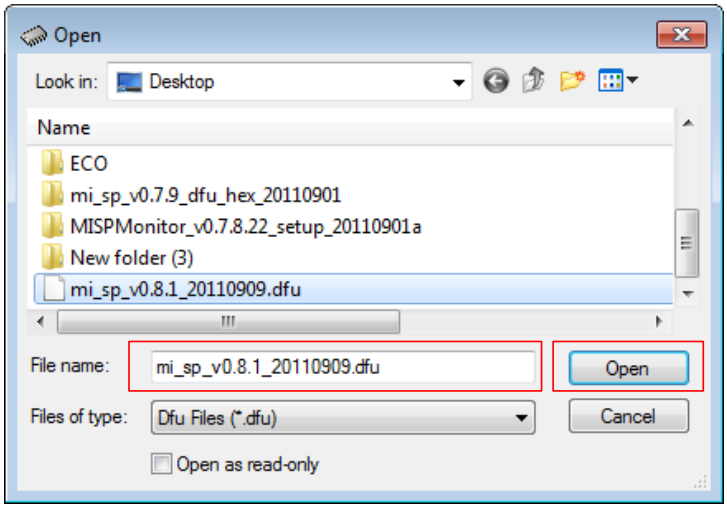
4. Execute DfuSe Demo utility by double clicking the

icon on your PC desktop.
5. Click the **Choose** button to open the pre-downloaded firmware file.

© MASTERIMAGE 3D, Inc.

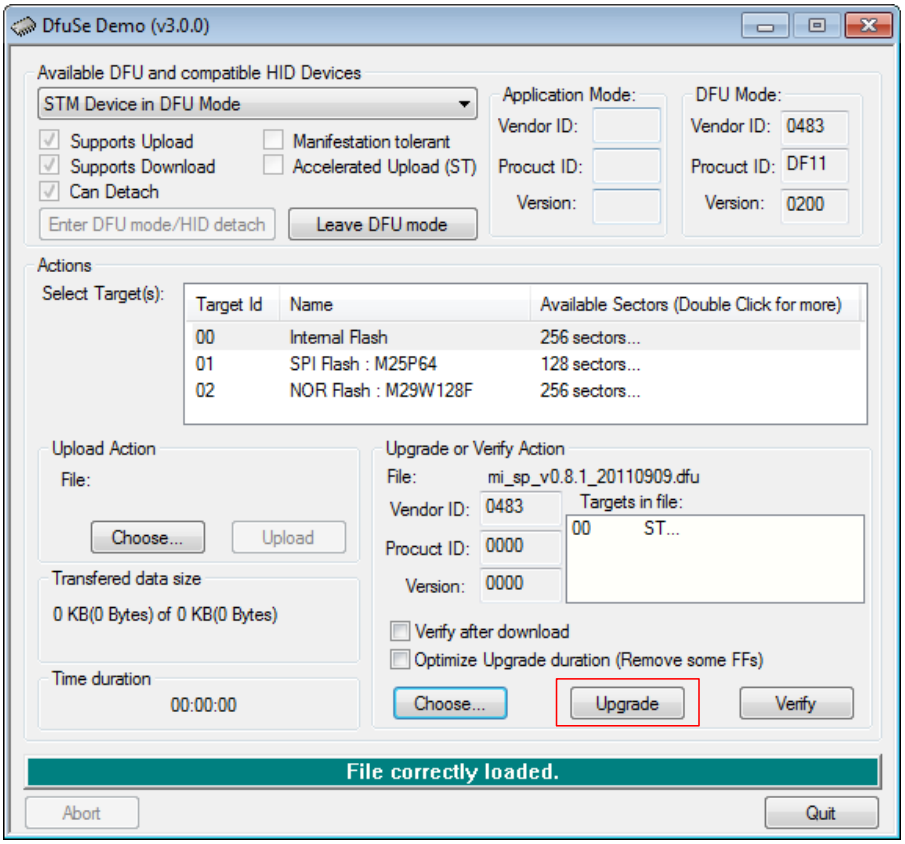


6. Select new firmware file from the location it was saved on your computer, having the ***.dfu** file extension in the **Open** dialog box. Then click the **Open** button to upgrade firmware.

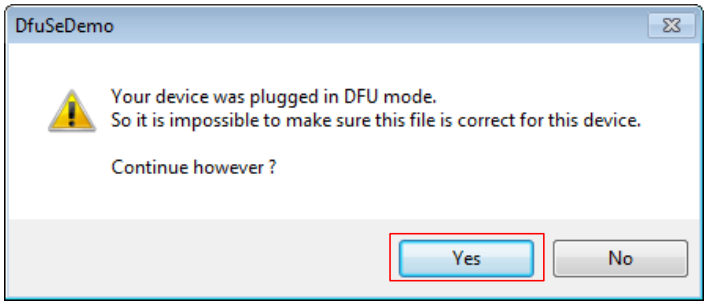


7. Click the **Upgrade** button to start firmware upgrading.

© MASTERIMAGE 3D, Inc.

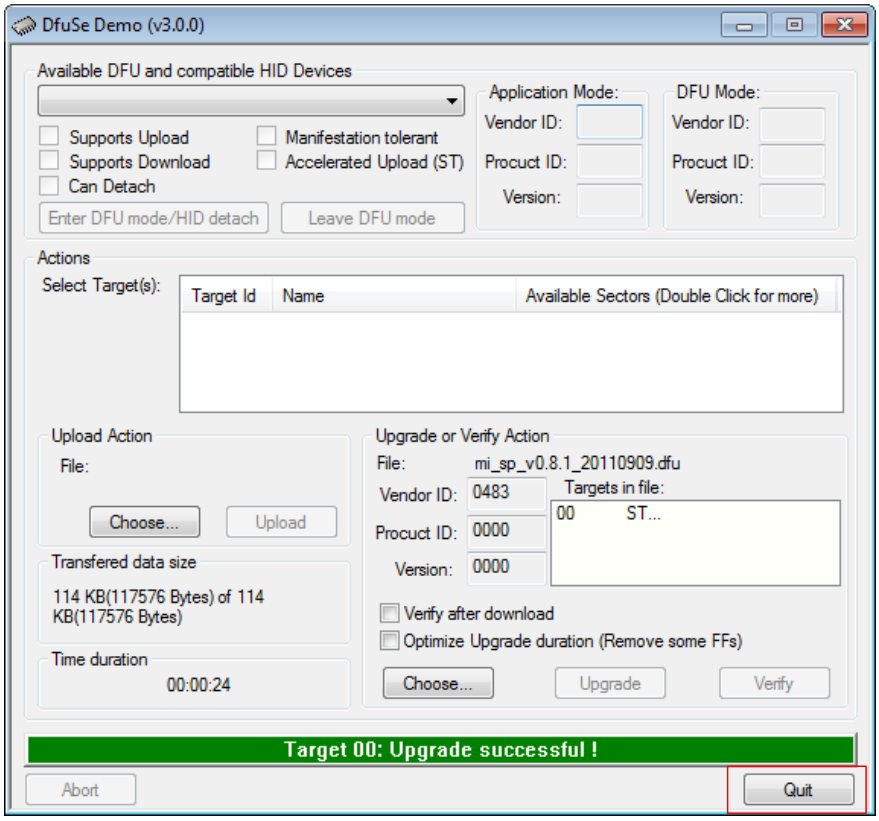


8. Click the **Yes** button if the utility shows a confirmation dialog such as the example below, after making sure the correct file has been selected for upgrade.


DfuSeDemo
Your device was plugged in DFU mode.
So it is impossible to make sure this file is correct for this device.
Continue however ?
Yes
No

9. Click **Quit** after confirming the firmware upgrade was successful.

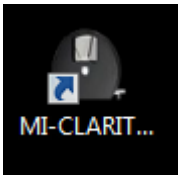
© MASTERIMAGE 3D, Inc.



10. Turn off the MI-CLARITY3D **AC Power Breaker** and then turn it on again (“cycle the power”).
11. Press the MI-CLARITY3D **POWER** button and check the new version number on the System Version screen, as shown below.

12.3. Upgrade FPGA Binary

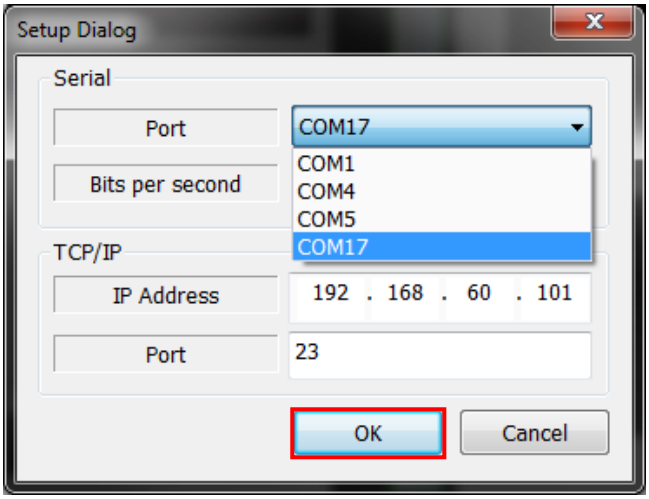
1. Connect between the MI-CLARITY3D and your PC using a USB ‘A’ to ‘B’ cable.
2. Check the **STMicroelectroncis Virtual COM Port** number in the Device Manager of your PC. (See Appendix E, page 93.)
3. Execute **Monitor** program by double clicking the program’s icon in your PC.



© MASTERIMAGE 3D, Inc.

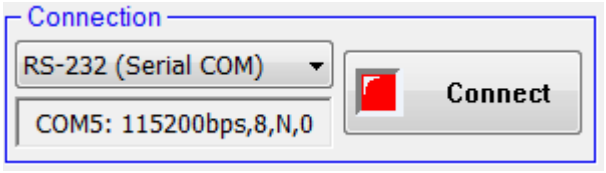
4. Click the **Setup** button to open the **Setup Dialog** window.

5. Select the COM Port number of **STMicroelectonices Virtual COM Port** that you checked in step 2 and click **OK**.

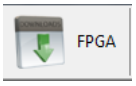


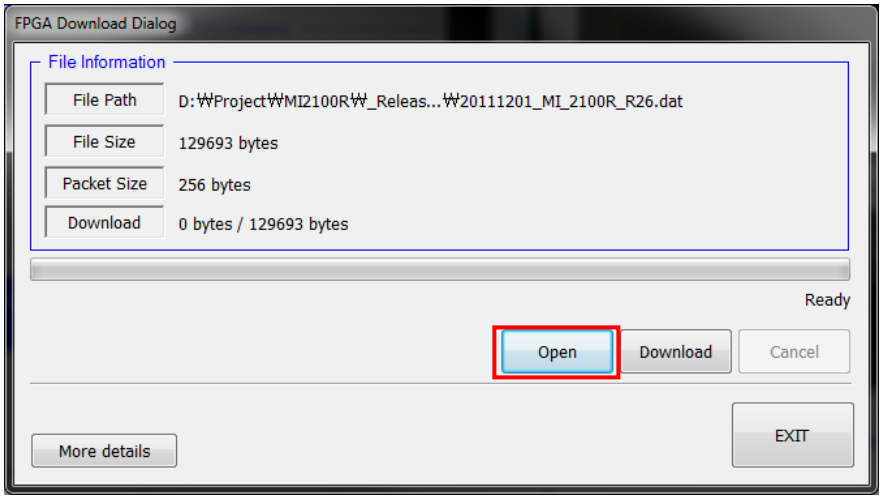
Example Setup Dialog

6. Click the **Connect** button to connect between the Monitor program and the MI-CLARITY3D.



7. Click the **FPGA** button to open the FPGA Download Dialog screen.

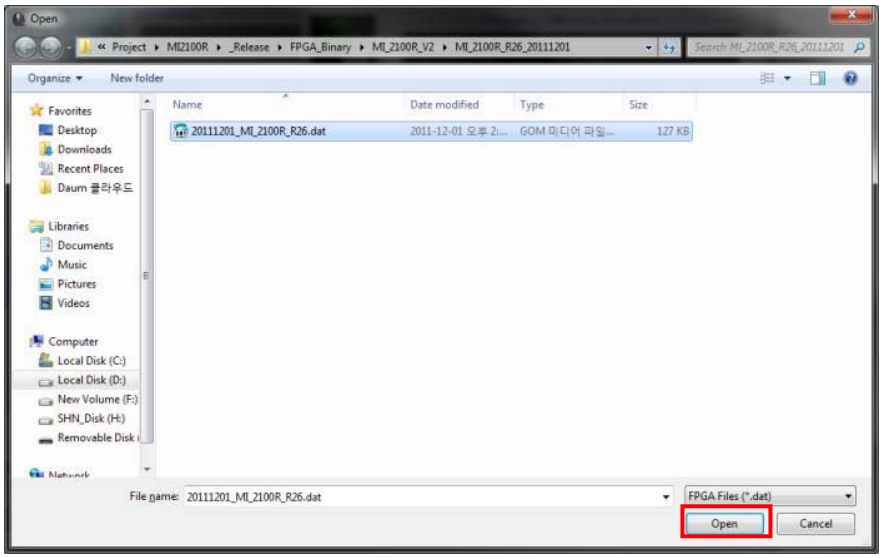




Example FPGA Download Dialog

© MASTERIMAGE 3D, Inc.

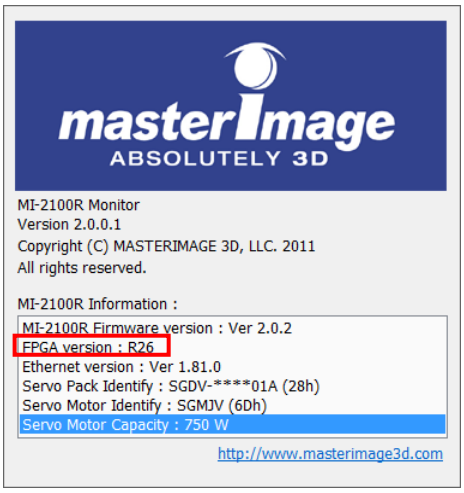
8. Click the **Open** button to open the Open dialog.
9. Select new FPGA binary file having '*.dat' file extension in the list of Open dialog box and click the **Open** button.



Example Open Dialog

10. Click **Download** button to start FPGA binary upgrading.
    - During FPGA binary upgrade, the FPGA Upgrade screen will be displayed on the control panel.

11. Click the **EXIT** button after confirming FPGA binary upgrade is successful.
12. Click the **Info** button to check the new FPGA version number (an example is shown below).



© MASTERIMAGE 3D, Inc.

One the upgrade process is complete, the system will have completed an automatic FACTORY RESET, therefore it will be necessary to reset the following items:

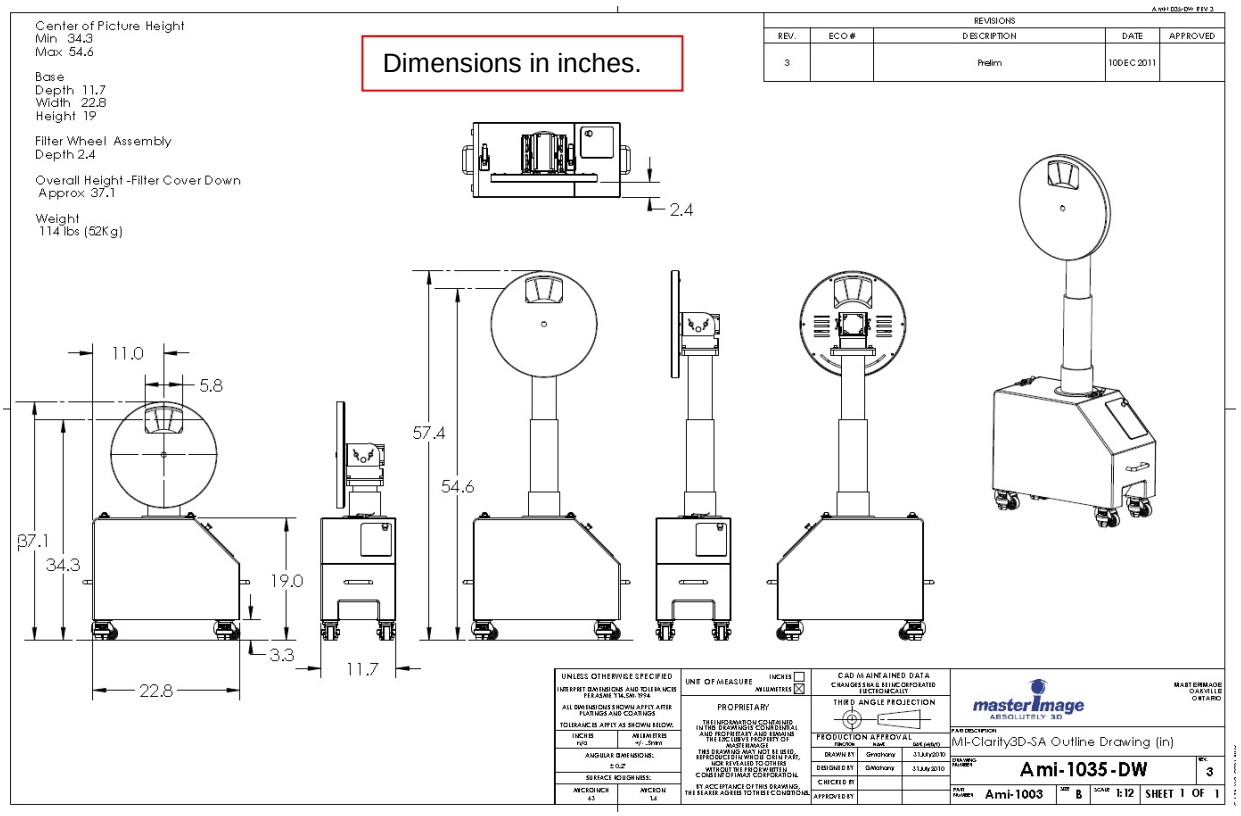
- LIFT ZERO – This process will be automatically prompted. See 8.2, Setting the Lifting Column Zero Position, on page 29.
- CLOCK – Re-enter the current date and time. See 8.1, Setting the Clock, on page 29.
- 3D and 2D Position – Re-enter the required height positions for 3D and 2D. See 8.3, Setting a 3D Position, on page 30, and see 8.4, Setting a 2D Position, on page 31.
- PFD Home Position – **Perform the Home Position adjustment**. Refer to section 8.7, Setting the PFD Home Position, on page 35.
- Ethernet Configuration – If using Ethernet automation re-enter the required configuration settings. See8.11, Ethernet Configuration, on page 40.

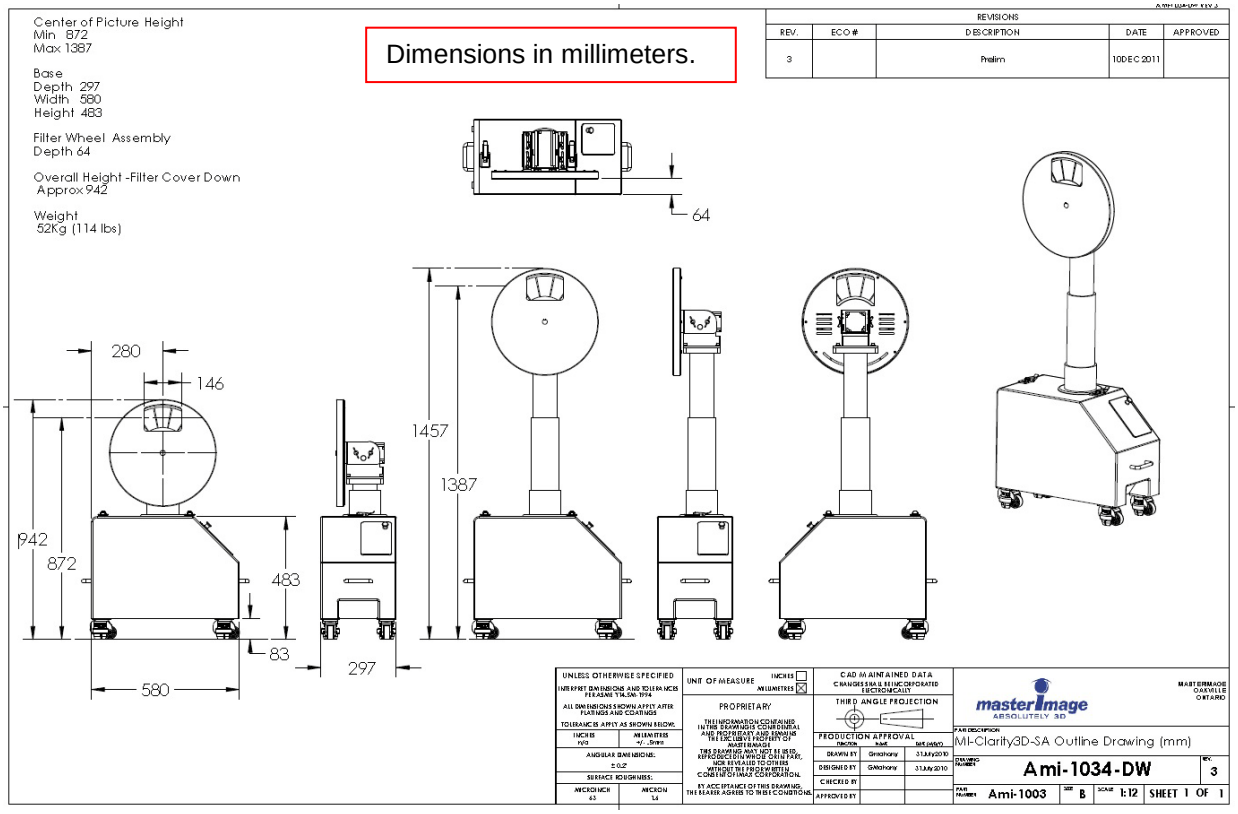
© MASTERIMAGE 3D, Inc.

13. Product Specifications

Category	Specification
Model Name	[200 ~ 230V] MI-CLARITY3D SA [100 ~ 120V] MI-CLARITY3D SA(T)
Size and Weight	**Projection Height** (Max/Min): 1370/870 mm (54.6/34.3 in.) **Width**: 580 mm (22.8 in.) **Depth**: 296.6 mm (11.7 in.) **Weight**: 52 kg (114 lbs.)
Polarized Filter Disc (PFD) Head	**Up/Down Speed**: 15 mm/sec (5/8 in./sec) (for standalone only) **Dedicated settings** and control buttons for 2D/3D positions **Enhanced Motor Control**: smooth start and stop motor ramping
Automation Interface	**Display**: 128x64 Graphic LCD **Controls**: Power, Run-Stop, 3D/2D, 4-way Menu Navigation, Emergency Stop **Log Messages**: Over 200 recorded events with time stamp
Projectors	Supports all professional DLP projectors DCI compliant systems and non-DCI professional systems
Screen Size	Maximum recommended size: 60 feet/18.2 meters Silver screen is required

© *MASTERIMAGE 3D, Inc.*





© MASTERIMAGE 3D, Inc.

14. Appendix A – Turning the Filter Head Assembly (FHA)

The following steps describe removing and turning the FHA in order to orient the system in a non-standard configuration. Reference *Orientations 3 & 4 – Reversed Filter Head Right and Left on page* 15.

1. Raise the filter motor at least 8 cm from its bottom stop position or to the memorized 3D position.
2. Power off and unplug the MI-CLARITY3D.

3. Loosen and remove the four hex-head bolts attaching the motor mount to the support bracket, while supporting the weight of the filter head assembly.

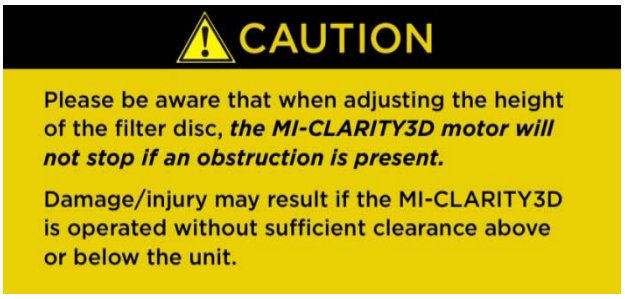
Use hex key to remove bolts

4. Remove the FHA.
5. Turn around the head assembly through 180° taking care not to stress the control cables. Place the mounting bracket on the rubber pad and reattach the motor mount with the four hex-head bolts.
6. Confirm that the PFD faces the correct direction when positioned in front of the lens – polarizing filter material to the screen side of the filter disk. Change the PFD direction if necessary.

IMPORTANT: **PFD Home Position adjustment is required**. Refer to section 8.7, Setting the PFD Home Position, on page 35.

© MASTERIMAGE 3D, Inc.

7. Move system in front of projector. Make various adjustments to PFD position according to standard installation procedures by moving the motor up and down (see 5.3 on page 16) and moving the bracket in its slide in order to position the filter close to the lens at the correct height (see *Orienting the MI-CLARITY3D in front of the Digital Projector* on page 13).


CAUTION
Please be aware that when adjusting the height of the filter disc, the MI-CLARITY3D motor will not stop if an obstruction is present.
Damage/injury may result if the MI-CLARITY3D is operated without sufficient clearance above or below the unit.

© MASTERIMAGE 3D, Inc.

15. Appendix B – MI-CLARITY3D Automation

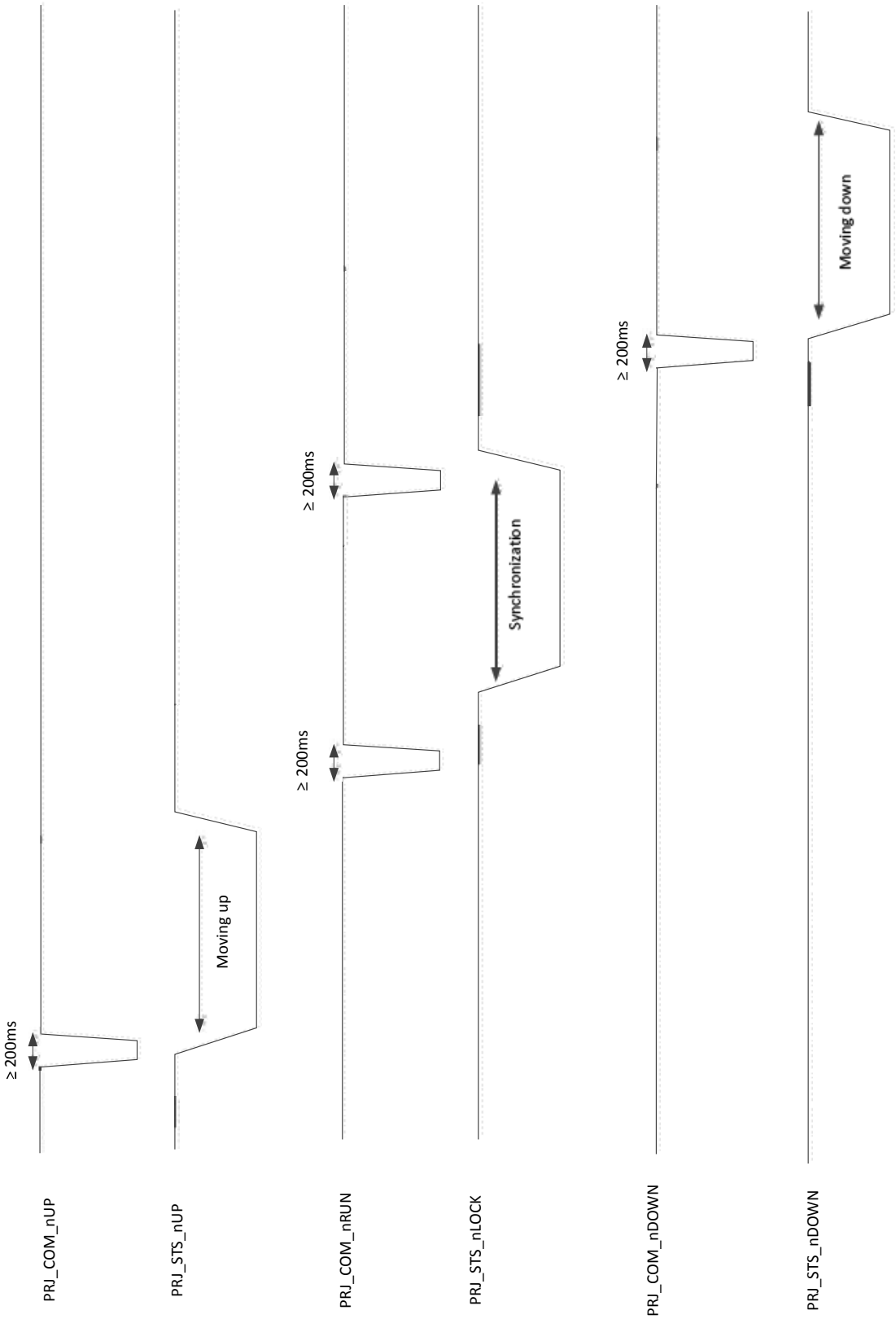
Table B-1. GPIO Automation

DSUB9(GPIO)		Comm. Direc-tion	DSUB37	Description	Comments
Pin name	Pin number		Pin number		
NC	1			No connection	
PRJ_COM_nRUN	2	←	12(+)	PFD RUN command	Comparator 24V max, 12V threshold (LM2901H)
	5		31(-)		
PRJ_SYNC	3	←	9(+)	Vertical sync pulse	
	5		28(-)		
PRJ_COM_nUP	4	←	2(+)	PFD UP command Low Pulse • 200ms	
	5		21(-)		
GND	5		20,21,22, 28,29,30, 31,	Ground	
PRJ_COM_nDOWN	6	←	3(+)	PFD DOWN command Low Pulse • 200ms	(LM2901H)
	5		22(-)		
PRJ_STS_nLOCK	7	→	1(+)	PFD driving status High pulse • 200ms	Open collector output 24V, 20mA (SN7407)
	5		20(-)		
PRJ_STS_nUP	8	→	10(+)	PFD position status High pulse • 200ms	
	5		29(-)		
PRJ_STS_nDOWN	9	→	11	PFD position status High pulse • 200ms	
	5		30		
Shield ground	frame		frame	Chassis Ground Connection	

See timing diagram for GPIO Automation, next page.

© MASTERIMAGE 3D, Inc.

GPIO AUTOMATION TIMING DIAGRAM



© MASTERIMAGE 3D, Inc.

Table B-2. TTL Automation

DSUB9(TTL)		Comm. Direc-tion	DSUB9	Description	Comments
Pin name	Pin number		Pin number		
NC	1		1	No connection	
TX	2	→	2	Transmitter	RS-232 Driver (ST3232ECTR)
RX	3	←	3	Receiver (Max :±25V)	
NC	4		4	No connection	
GND	5		5	Ground	
NC	6		6	No connection	
NC	7		7	No connection	
AUTO4_SYNC	8	←	8	TTL Level SYNC input	
AUTO3_SYNC	9	←	9	RS-232 Level SYNC input (Max :±25V)	ST3232ECTR
Shield ground	frame		frame	Chassis Ground Connection	

Table B-3. RS232 Automation

DSUB9(RS-232)		Comm. Direc-tion	DSUB9	Description	Comments
Pin name	Pin number		Pin number		
NC	1		1	No connection	
TX	2	→	2	Transmitter	RS-232 Driver (ST3232ECTR)
RX	3	←	3	Receiver (Max :±25V)	
NC	4		4	No connection	
GND	5		5	Ground	
RXDM	6	←	6	Inverting receiver (Max :±25V)	RS-485/422 Driver (ST485BD)
RXDP	7	←	7	Non inverting receiver (Max :±25V)	
TXDM	8	→	8	Inverting transmitter	
TXDP	9	→	9	Non inverting transmitter	
Shield ground	frame		frame	Chassis Ground Connection	

© MASTERIMAGE 3D, Inc.

Table B-4. 3D Port Automation

DSUB15(3D-Port)		Comm. Direc-tion	DSUB15	Description	Comments
Pin name	Pin number		Pin number		
V12A	1	←	1	+12V Max:1A	
GND	2		2	Ground	
GND	3		3	Ground	
AUTO2_TXD	4	→	4	Transmitter	RS-232 Driver (ST3232ECTR
AUTO2_RXD	5	←	5	Receiver (Max: ±25V)	
AUTO2_3D_ MODEP	6	←	6(+)	3D Mode State	Comparator Max: ±36V (TS391ILT)
AUTO2_3D_ MODEM	13	←	13(-)		
AUTO2_3D_ SYNCP	7	←	7(+)	SYNC	
AUTO2_3D_ SYNCM	14	←	14(-)		
AUTO2_INPUT_REFP	8	→	8(+)	3D L/R Input Reference (P)	Photocoupler Vce :35V Vec:6V (PC365N)
AUTO2_INPUT_REFM	10	→	10(-)		
AUTO2_DISPLAY_REFP	11	→	11(+)	3D L/R Display Reference (P)	
AUTO2_DISPLAY_REFM	12	→	12(-)		
Shield ground	frame		frame	Chassis Ground Connection	

15.1. Ethernet Automation

This section covers the requirements for Ethernet automation in detail and explains the process for the writing of macros for commonly found digital cinema servers in the market.

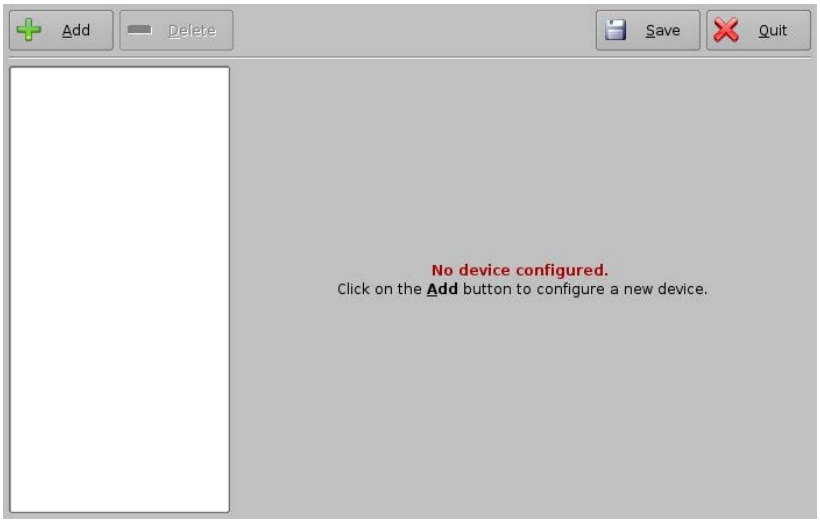
Note: Attempt these steps only if you are familiar with server configuration settings. If you are unsure of the processes involved, please contact the respective manufacturer of your equipment for further information.

If you require detailed information on other forms of automation control please contact MasterImage at support@masterimage3d.com for details.

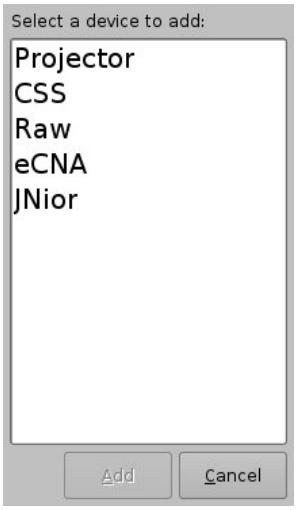
© MASTERIMAGE 3D, Inc.

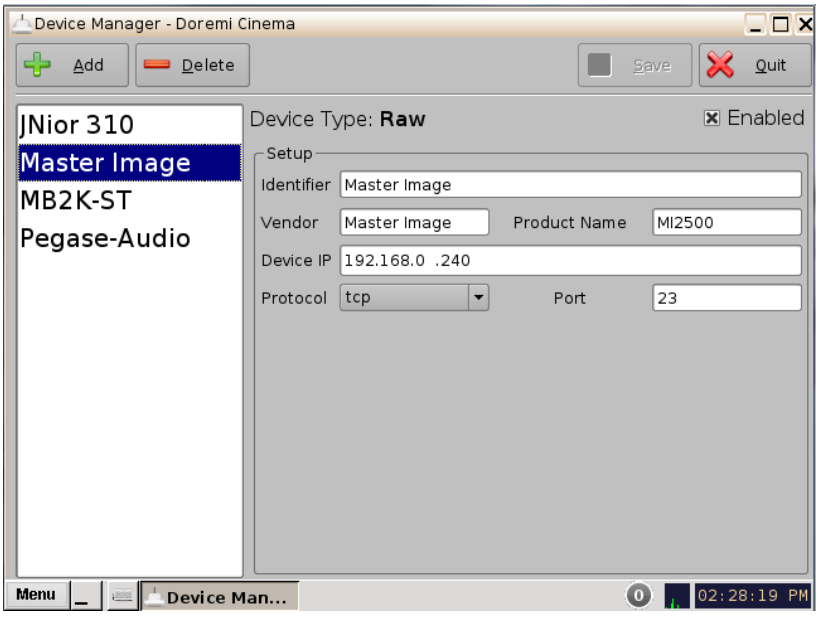
15.1.1. Doremi Server

1. Within the server menu, open Device Manager (Menu > DTS Digital Cinema > Device Manager)



2. Press the Add button and the list of devices will display (shown right).
3. Select the **Raw** option to create MasterImage as a known device in the server's listing.
4. Complete the fields as shown below. Ensure the settings entered match those of the MI-CLARITY3D for IP Address and Port Number. Check the **Enabled** box and save the entry.

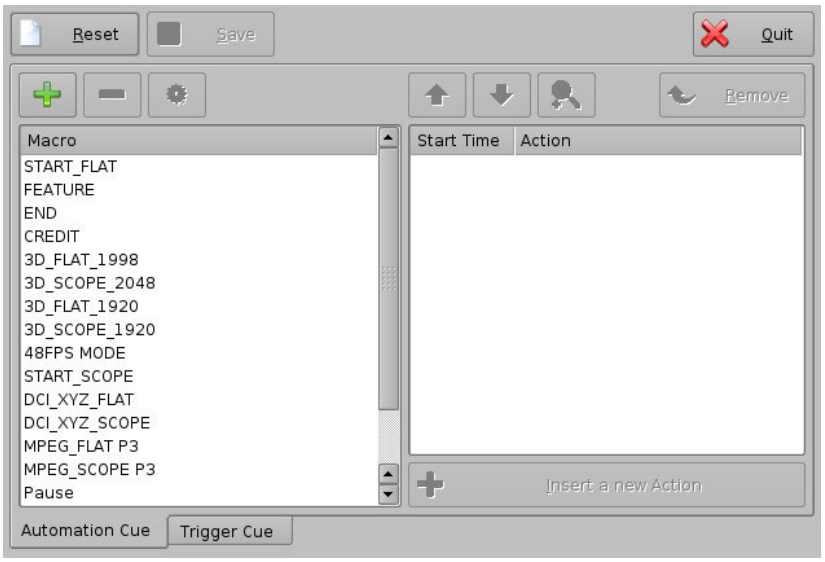




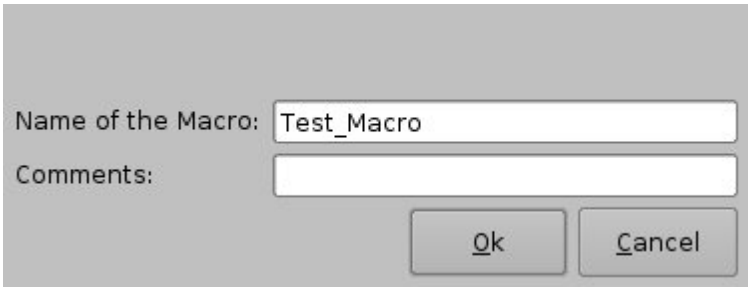
The MI-CLARITY3D has now been successfully added into the server configuration.

© MASTERIMAGE 3D, Inc.

It is now possible to create the macro files to enable the server to control the MI-CLARITY3D. The files required are: **MasterImage Start**, **MasterImage Stop**, **MasterImage 2D**, **MasterImage 3D** and **MasterImage Up/Down Stop**. These are created in the Macro Editor option of the server menu. (Menu > DTS Digital Cinema > Macro Editor)

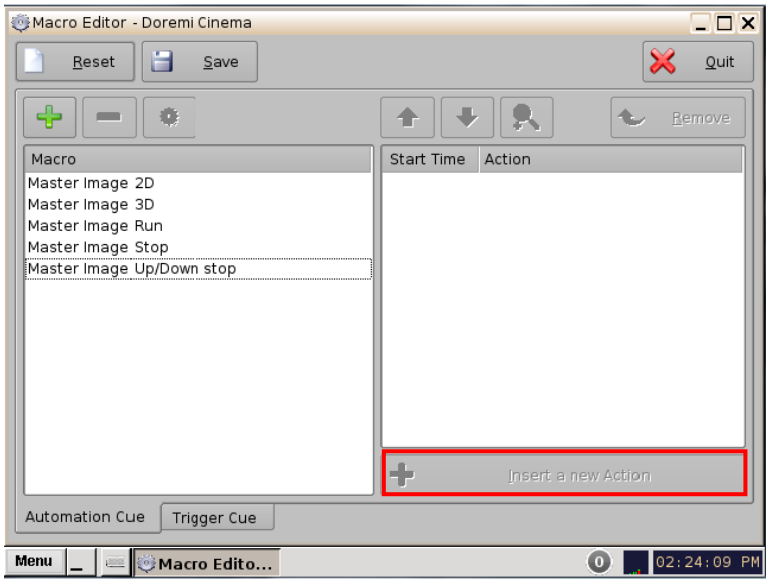


1. Within the Automation Cue tab press the + button to start a new macro. Replace the default Test_Macro text with the label for one of the MI macros (for example, **MI Start**).

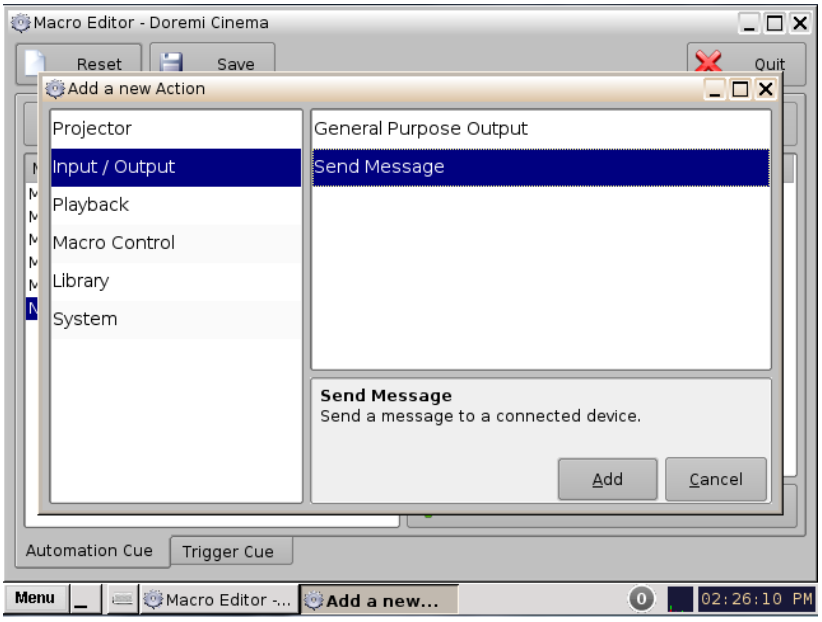


2. After the item has been created press **OK** return to the main Macro Editor screen. Repeat this process for the other four required macros, **MasterImage Stop**, **MasterImage 2D**, **MasterImage 3D** and **MasterImage Up/Down Stop**.

© MASTERIMAGE 3D, Inc.

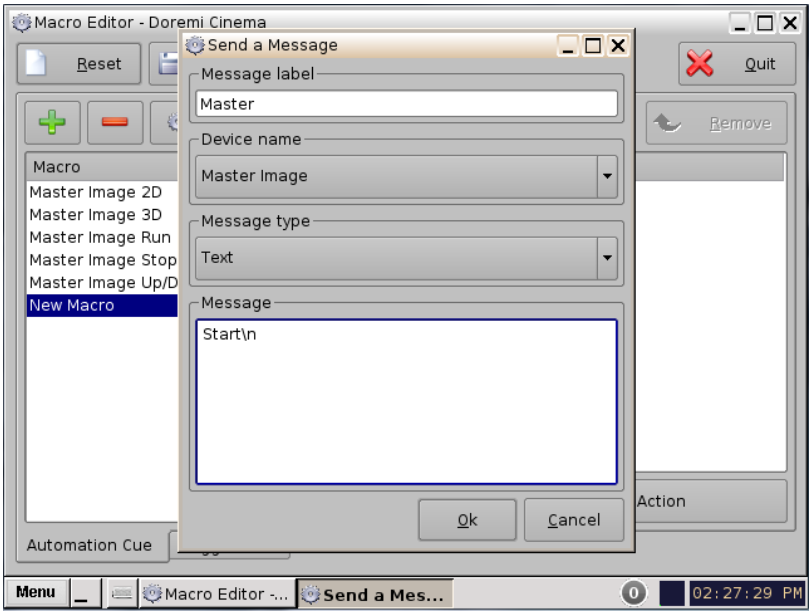


3. To insert an action for each newly created macro, select the macro in question from the list within the Macro window and press the **Insert a New Action** button which will become available.



4. Highlight the **Input/Output** option and **Send Message**, and then press the **Add** button. The following configuration window will appear:

© MASTERIMAGE 3D, Inc.



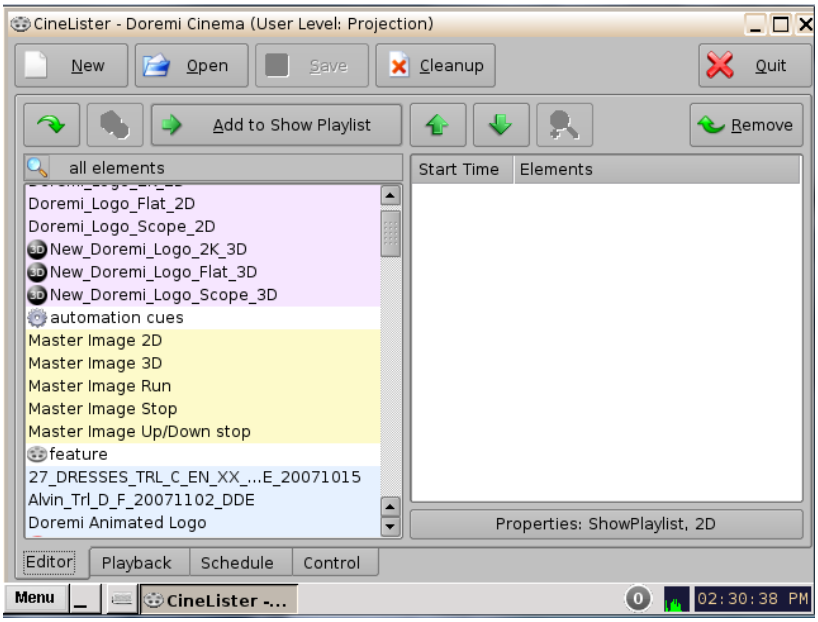
5. In this window, choose the device **MasterImage** from the **Device** name dropdown list and type in the Message label of **MasterImage Start**. Ensure the Message type is Text and type **Start\n** in the Message box. After all fields have been completed press the **OK** button.
6. Repeat this step for the remaining four macros entering the corresponding message text:

MasterImage Stop	**Stop\n**
MasterImage 2D	**PFD DOWN\n**
MasterImage 3D	**PFD UP\n**
MasterImage Up/Down Stop	**PFD Stop\n**

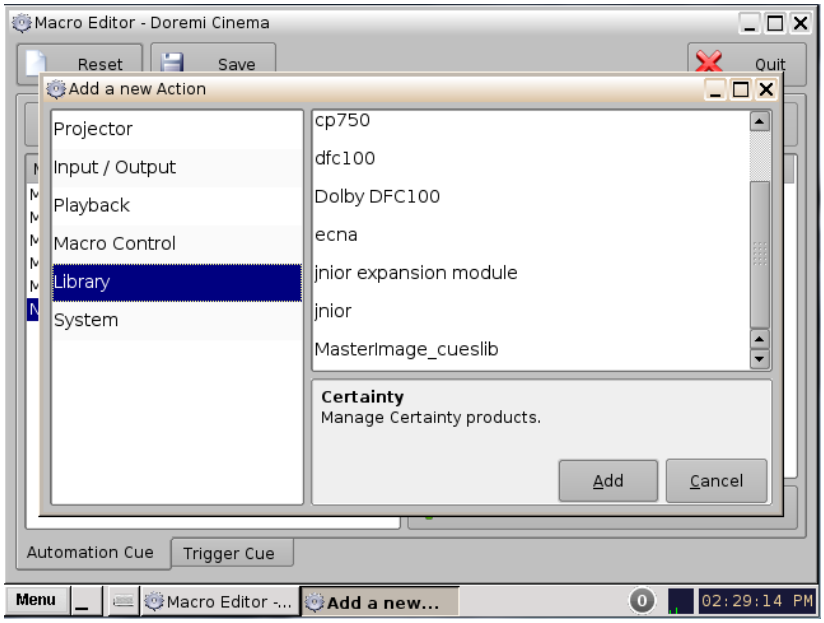
Note: At the end of each command, add the text "**\n"** to complete the command.

7. Once all message text has been added, press the **Save** button from the main Macro Editor screen.
8. Now when you return to the CineLister screen and press the **Refresh** button, the macros will all display in the **Automation Cues** section (shown below) and can be added to future playlists as required.

© MASTERIMAGE 3D, Inc.

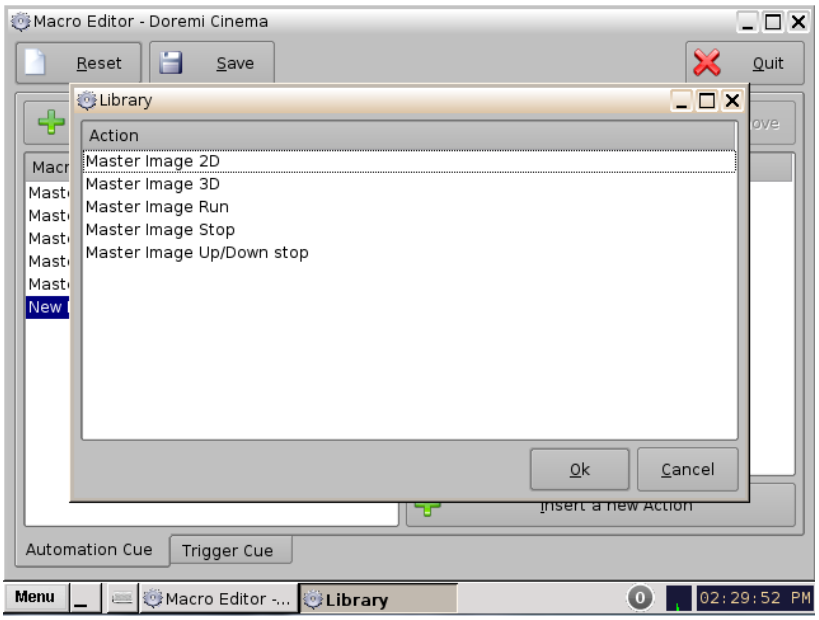


In future versions of Doremi software updates, the MasterImage macros will be included in a file named MasterImage_cueslib. This will remove the requirement for the information to be entered manually as described in the above steps.



The MasterImage_cueslib file will be found in the **Library** section of the Macro Editor and the macros will be seen within that file.

© *MASTERIMAGE 3D, Inc.*



15.1.2. Qube Server

To create automation macros for the MI-CLARITY3D in the Qube server it is necessary to edit two XML files within the server's configuration.

The files in question are located in the path C:/Program Files/Qube Cinema/XP and are named *automationdevices.xml* and *automationcues.xml*

Within the same path it is necessary to load a new file named *MasterImage.xml*

1. First create a link between the server and the MI-CLARITY3D within the *automationdevices.xml* file. Below you will see the structure of this file:

```
<?xml version="1.0" encoding="utf-8"?>
<Devices xmlns="http://schemas.qubecinema.com/Automation/Devices/2008-01-26">
    <Device name="Device Name" class="Device Class" enable="true">
    <Configuration>
        <Key name="File" value="file name of the device"/>
        <Key name="Address" value="address value"/>
        <Key name="Port" value="port value"/>
    </Configuration>
  </Device>
</Devices>
```


© MASTERIMAGE 3D, Inc.

2. Complete the red fields with the details of the MasterImage MI-CLARITY3D where:

"Device Name"	is	"MasterImage"
"Device Class"	is	"Qube.Automation.streamdevice.TCP"
"file name of the device"	is	"MasterImage.xml"
"addess value"	is	MI-CLARITY3D Assigned IP Address
"port value"	is	"23"

It is recommended that **Notepad++** or a similar program is used for xml file editing.

Note: The *automationdevices.xml* file is a shared file for all devices that the server can control via automation cues thus it will contain information for devices such as DLP Projector, Sound System and Lighting Control etc. For this reason the file cannot be replaced and must be modified with the lines added as above for the MI-CLARITY3D.

Next it is necessary to create and load onto the server the *MasterImage.xml* file. This file defines and names the commands and text that will be sent to the MI-CLARITY3D.

3. Edit this file so that it contains the information below:

```
<?xml version="1.0" encoding="utf-8"?>
<StreamDevice name="MasterImage"
xmlns="http://schemas.qubecinema.com/Automation/StreamDevice/2008-01-26">
    <Method name="Start">
        <Instructions>
            <Send>Start&#x0D;&#x0A;</Send>
        </Instructions>
    </Method>
    <Method name="Stop">
        <Instructions>
            <Send>Stop&#x0D;&#x0A;</Send>
        </Instructions>
    </Method>
    <Method name="3Dposition">
        <Instructions>
            <Send>PFD UP&#x0D;&#x0A;</Send>
        </Instructions>
    </Method>
    <Method name="2Dposition">
        <Instructions>
            <Send>PFD Down&#x0D;&#x0A;</Send>
```


© MASTERIMAGE 3D, Inc.

```
        </Instructions>
    </Method>
    <Method name="PFDStop">
        <Instructions>
            <Send>PFD Stop&#x0D;&#x0A;</Send>
        </Instructions>
    </Method>
</StreamDevice>
```

The symbols
&#x0A are necessary at the end of each command to close the command in the xml structure.

Finally the *automationcues.xml* file can be edited so that the MI-CLARITY3D device is associated with the command names that have been created. This allows the cues to be seen in the Qube graphical interface.

Note: Again, this file is a shared file with other devices in the system so must be edited and not replaced.

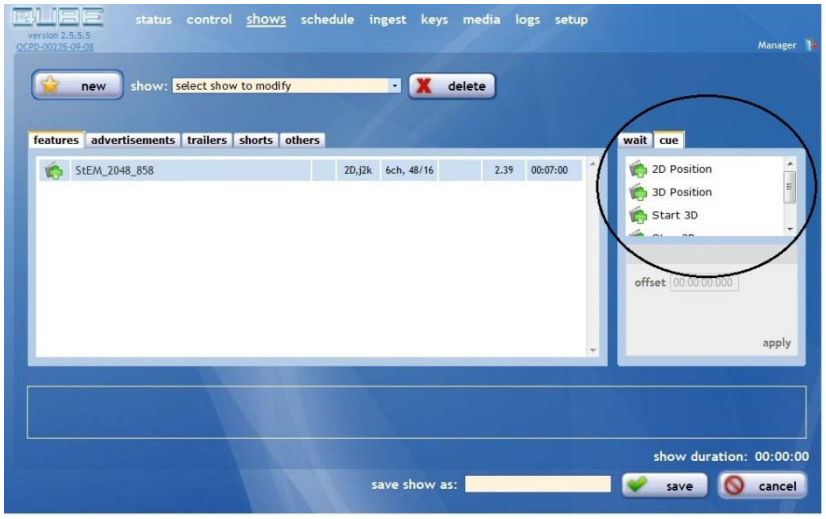
4. Edit this file so that it contains the information below:

```
<Cue name="Start 3D">
    <Actions>
        <InvokeMethod name="Start" device="MasterImage"/>
    </Actions>
</Cue>
<Cue name="Stop 3D">
    <Actions>
        <InvokeMethod name="Stop" device="MasterImage"/>
    </Actions>
</Cue>
<Cue name="3D Position">
    <Actions>
        <InvokeMethod name="3Dposition" device="MasterImage"/>
    </Actions>
</Cue>
<Cue name="2D Position">
    <Actions>
        <InvokeMethod name="2Dposition" device="MasterImage"/>
    </Actions>
</Cue>
```


© *MASTERIMAGE 3D, Inc.*

```
<Cue name="Up/Down Stop">
    <Actions>
        <InvokeMethod name="PFDStop" device="MasterImage"/>
    </Actions>
</Cue>
```

Once this file has been edited and saved the graphical interface of the Qube server will display the new cues that can be selected for future playlist creation.

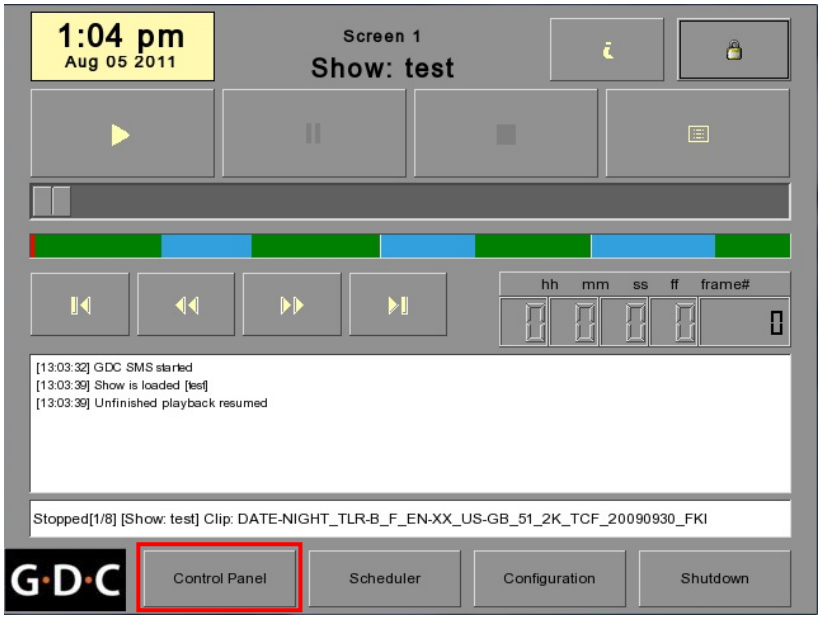


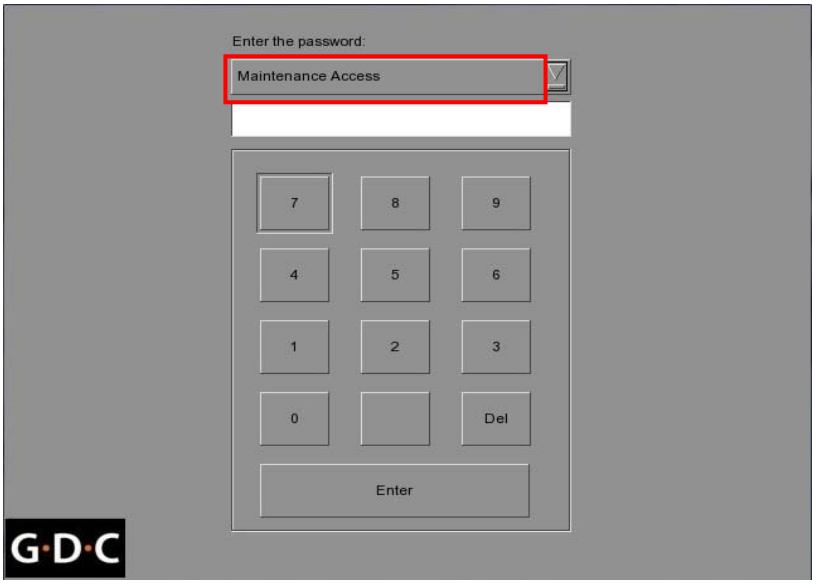
15.1.3. GDC Server

The steps described below are specific to the GDC SX-2001 server. If information is required for different models, please contact GDC directly.

1. In the SMS Main Menu press the **Control Panel** button and log on as **Maintenance Access**.

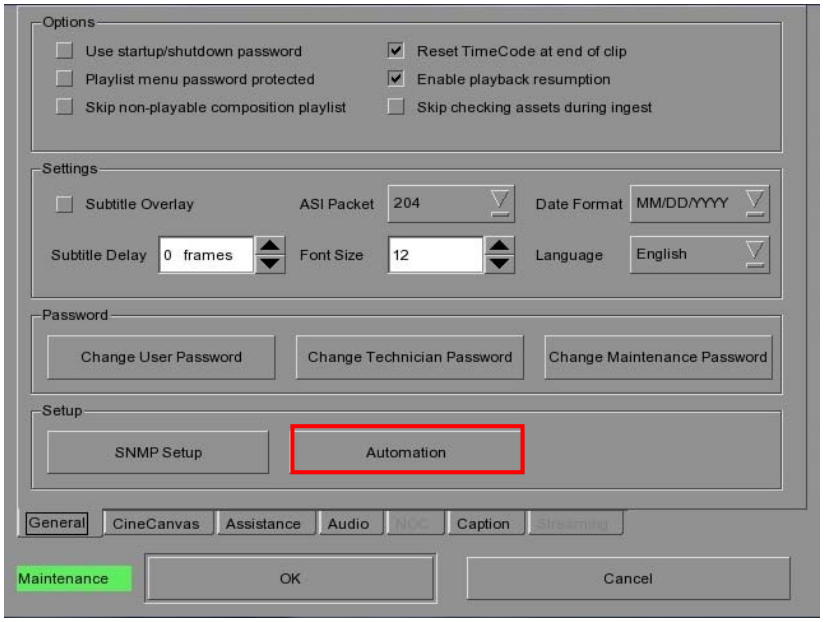
© MASTERIMAGE 3D, Inc.





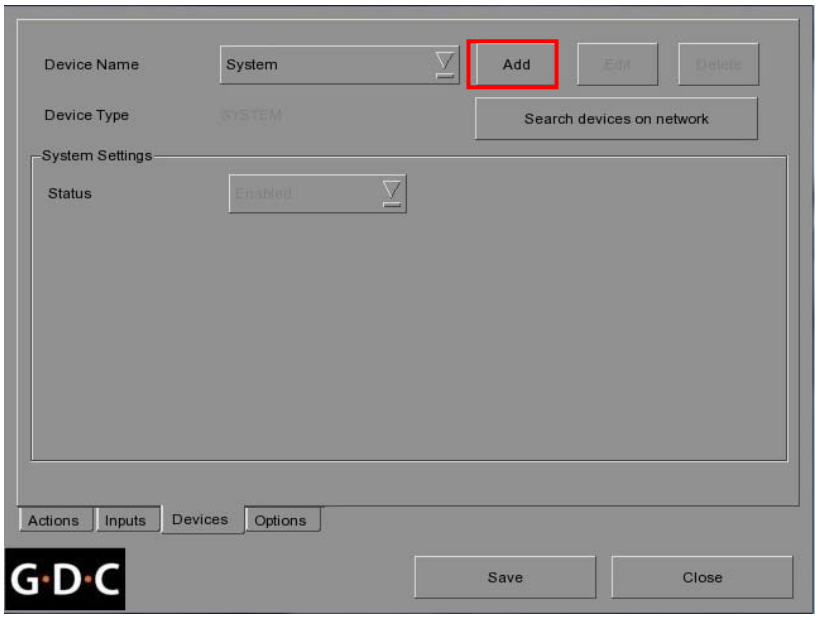
2. Once you have logged on, press the **Automation** button found on the **General** tab.

© MASTERIMAGE 3D, Inc.



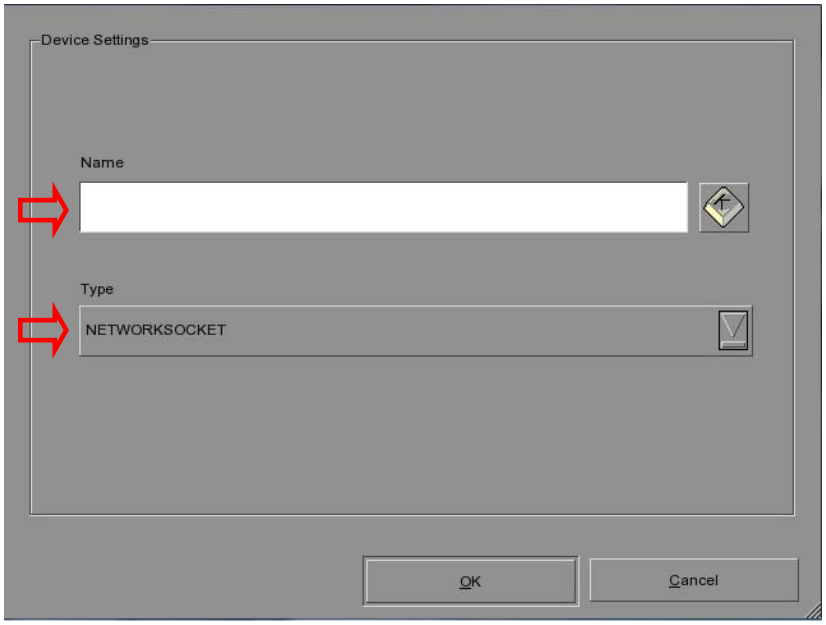
The MI-CLARITY3D must be added as a device within the GDC server configuration.

3. Select the **Devices** tab and press the **Add** button.

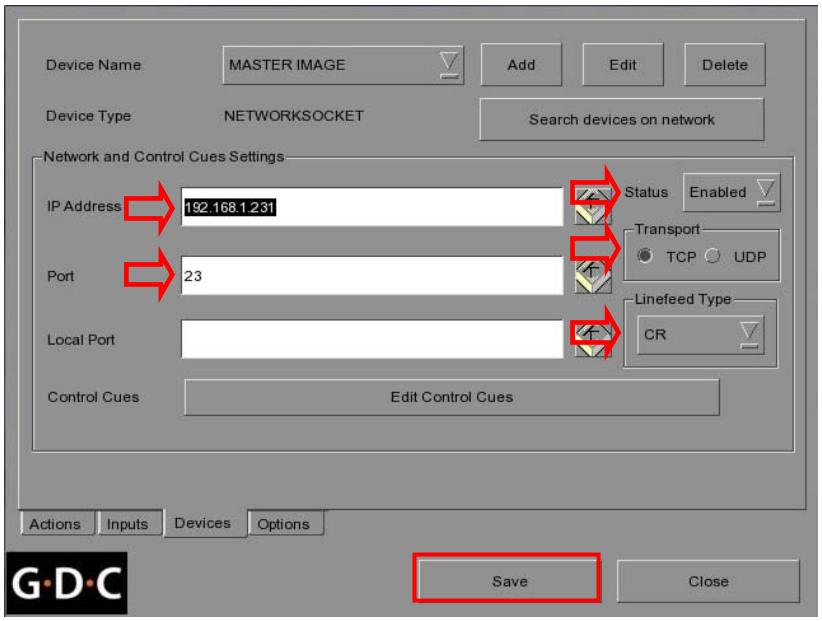


The following screen will display:

© MASTERIMAGE 3D, Inc.



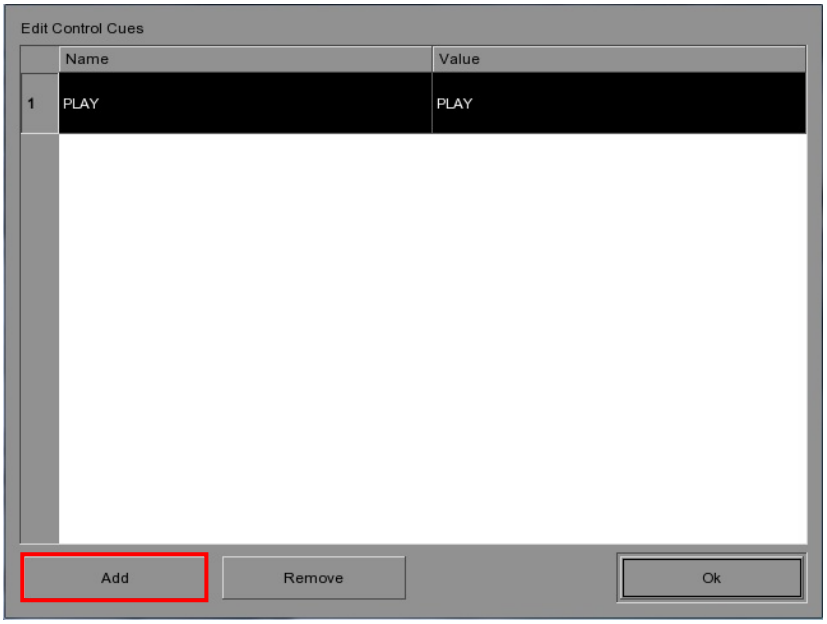
4. Name the new device **MasterImage**, and ensure the **Type** selection is set to **NETWORKSOCKET**, then press **OK**.
5. In the next screen, enter the configuration settings for the MI-CLARITY3D **IP Address** and **Port Number**.
6. In the **Transport** option select **TCP** and in the **Linefeed Type** select **CR** and ensure the **Status** is set to **Enabled**.
7. Once all entries have been made press the **Save** button.



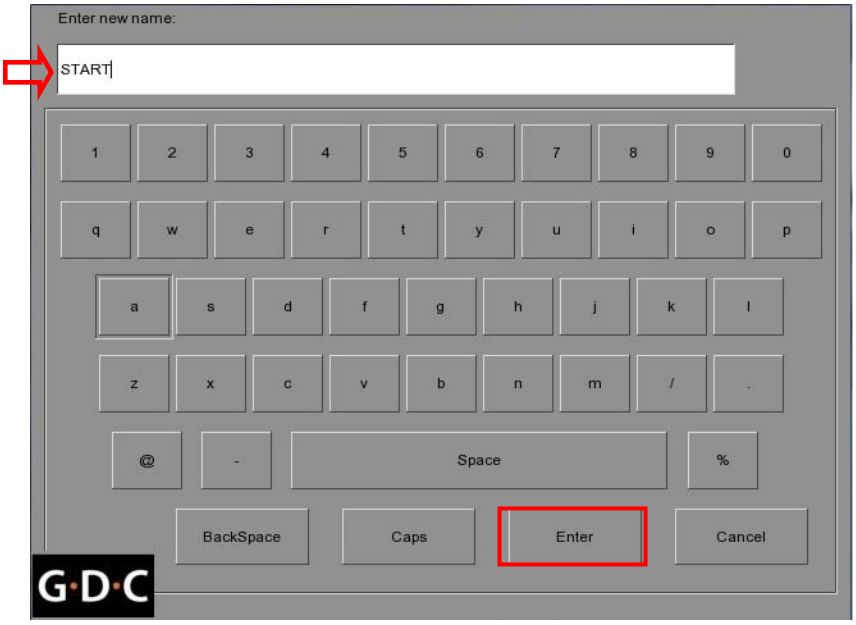
Lastly, it is necessary to program the control macros in the server.

8. Press the **Edit Control Cues** button and the following screen will display.

© MASTERIMAGE 3D, Inc.

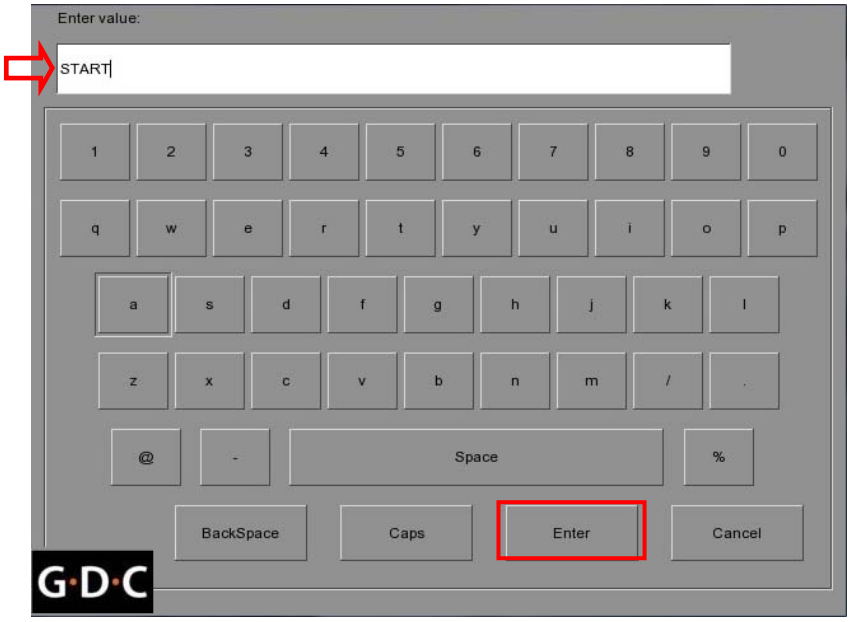


9. Press the **Add** button to create a new event. In this case, name the event **START**.



10. Press the **Enter** button and enter the command value for the event. Again in this case, **START**.

© *MASTERIMAGE 3D, Inc.*



11. Press the **Enter** button to save this change, then go back and make entries for the remaining four macros that are required.

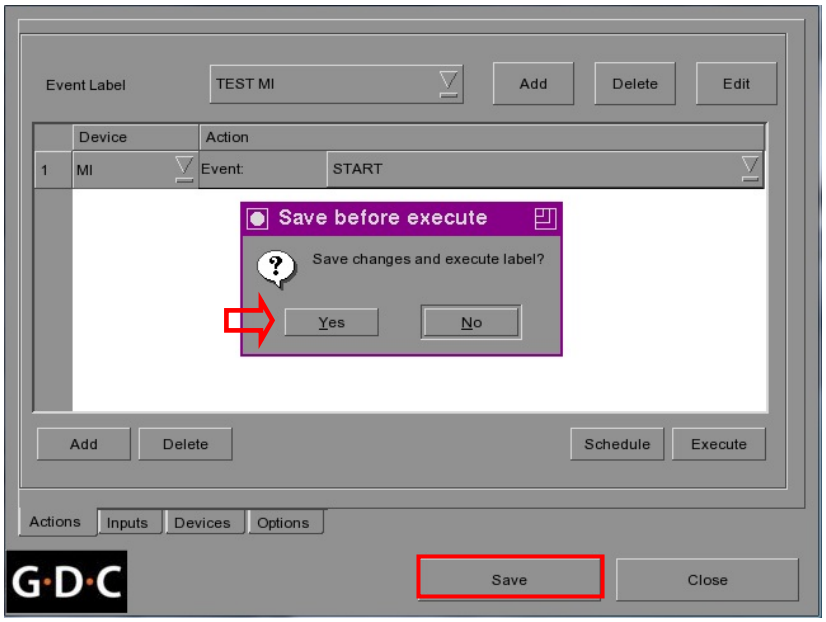
Event Name STOP	Enter Value STOP
Event Name 2D POSITION	Enter Value PFD DOWN
Event Name 3D POSITION	Enter Value PFD UP
Event Name UP/DOWN STOP	Enter Value PFD STOP

Once all macros have been created, return to the **Actions** tab of the **Automation** screen to create the events that are needed to communicate. This is done by pressing the **Add** button.

12. For each event, choose the device that was defined in the first step, **MasterImage**, and then select the required event action from the dropdown list, for example: **Start**.
13. Follow the same steps to create the rest of the event actions for **Stop**, **3D Position**, **2D Position** and **Up/Down Stop**.

© *MASTERIMAGE 3D, Inc.*

14. Once all event actions have been created press the **Save** button followed by **Yes**.



© MASTERIMAGE 3D, Inc.

16. Appendix C – Installation Record

The form below and on the next page is an example of the installation record form to be filled out once the MI-CLARITY3D has been set up and configured.

For a copy of the form to be filled out, please contact your equipment provider or email a request to support@masterimage3d.com.

Once the form is completed, send it to support@masterimage3d.com or fax a copy to +1 323-960-8008.

MasterImage 3D System Installation Record

1. Theatre Information

Date New/Rev.				8/29/2012	
Theatre Name	SuperVisual Multiplex			Auditorium No.	2
Address	152 Cinema Street				
City	Cinema Town		State/Province	CA	
Zipcode	94832		Country	USA	
Theatre Manager	Steve Clarity		Theatre Phone	818-549-7853	
Technical Manager	Dave Christie		Technical Phone	818-549-8526	
Screen Size	45' x 24'	Throw distance	80'	No of Seats	160

2. System Information

2-1. MI 3D System

Model No.	MI-CLARITY3D	Voltage	120	200/220
Serial No.	1207-0549	Software Ver.	1.2.0 R23	
Install Date	29-Aug	Install Rep.	Stuart Legend	
Distributor/Integrator	Digitech Services			
Install Notes				

2-2. Projector

Manufacturer	Christie	Model No.	CP-2220
Notes	Doremi IMB Installed		

2-3. Server/IMB

Manufacturer	Doremi	Model No.	DCP-2K4
Notes			

2-4. Silver Screen

Manufacturer	Severtson	Model No.	
Notes			

© MASTERIMAGE 3D, Inc.

17. Appendix D – Periodic Maintenance

The table below show the least regular maintenance points carried out by operator in cinema.

To guarantee reliable system operation, weekly, monthly and yearly routine maintenance actions should be conducted like manual description or other technical bulletin that MASTERIMAGE released.

If you need any assistance regarding these routine jobs, please contact your equipment provider or email support@masterimage3d.com.

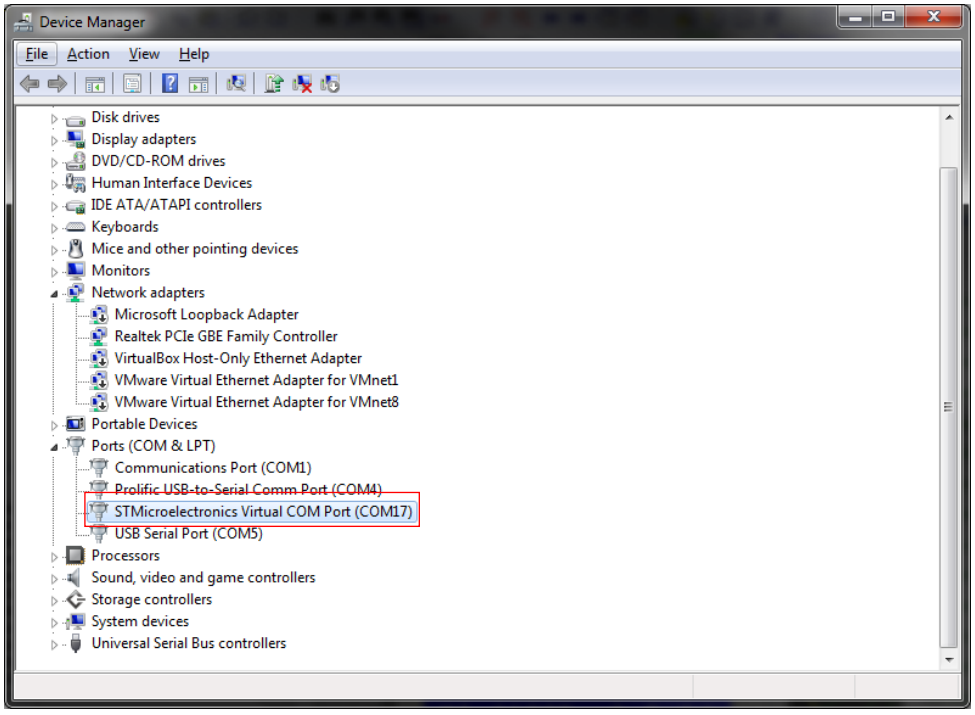
INTERVAL	ITEM	ACTION	REMARKS
Weekly	☐ PFD Cleaning	Remove dust from PFD.	Refer to Cleaning the PFD, page 52
	☐ Check for PFD Damage	Inspect surface using flashlight.	Burns, scratches, etc.
Monthly	☐ Clean inside of PFD Cover	Clean inside PFD cover.	
	☐ Check screws are secure	Check all screws on the Filter Head Assembly to verify they are secure.	
Yearly	☐ PFD Replacement	Replace the PFD.	Refer to Changing the Polarizing Filter Disk (PFD), page 46

© MASTERIMAGE 3D, Inc.

18. Appendix E – Check the STM Virtual COM Port Number

You can see the virtual COM Port number after connecting MI-CLARITY3D to your PC.

- Run the **Control Panel** in your PC.
- Double-click the **Device Manager** in the Control Panel screen.
- Select the **Ports (COM & LPT)** item in the Device Manager screen.
- Check the Port Number of **STMicroelectronics Virtual COM Port (COMxx)**.



End of Manual

For additional information, go to www.masterimage3d.com.

© *MASTERIMAGE 3D, Inc.*